2021

SdKfz 251

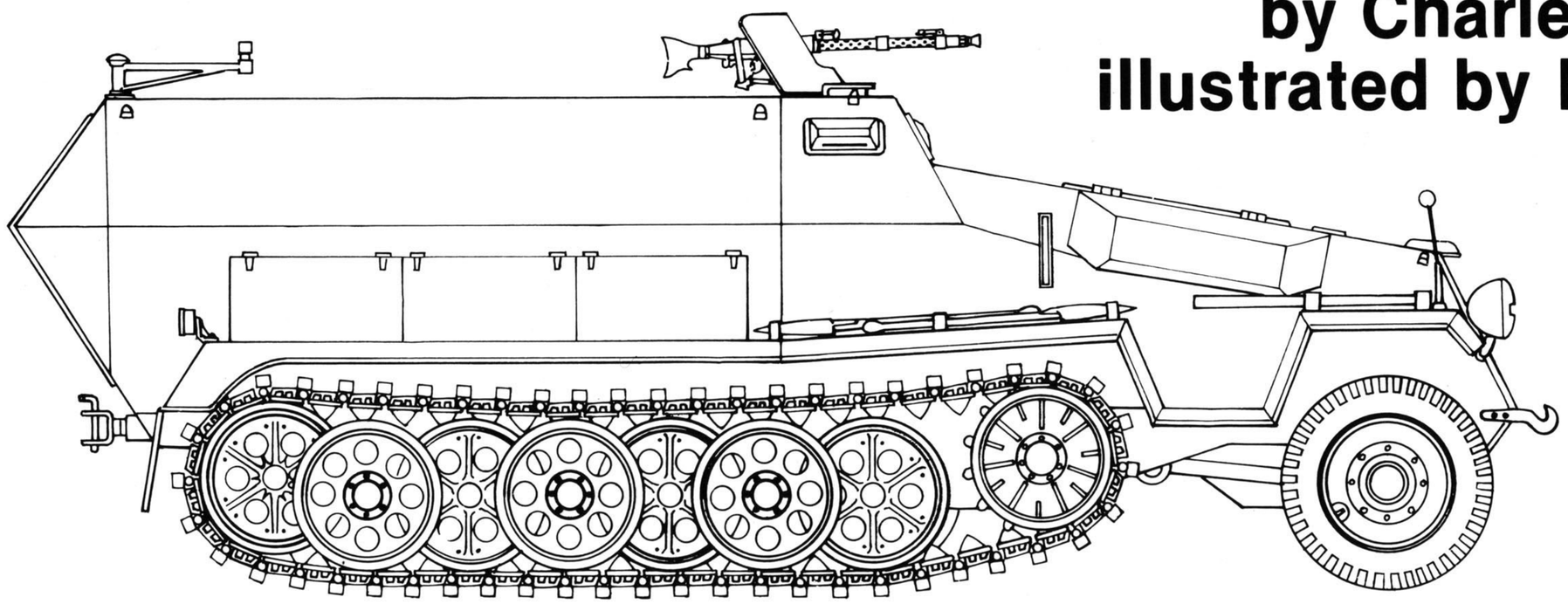
in action

DON GREER

squadron/signal publications
Armor Series No. 21

SdKfz 251 in action

by Charles Kliment
illustrated by Don Greer



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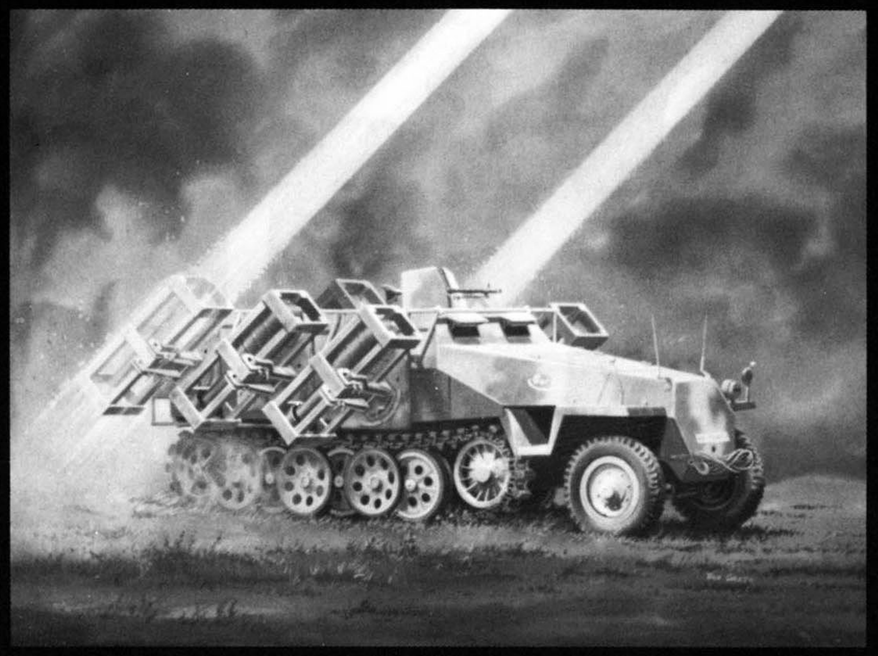

(Cover) "Gerti", an Ausf.D firing 32cm rockets on the Russian front in the spring of 1944. It is an SdKfz 251/1.

PANZER

ASSAULT BADGE

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This SdKfz 251 Ausf.C in Russia during 1941, carries no front MG shield as it mounts the heavy MG. The front MG is draped by the German flag for aerial recognition, and jerry-cans, bucket and extra equipment are carried again outside the vehicle. These vehicles were pretty cramped inside when carrying the full complement of 12 men.

Introduction

The tank was developed during the first World War as a means to break the stalemate on the Western Front. Its intended function was to break through enemy lines and clear the way for following infantry. This the tanks were eventually able to do, but they were unable to exploit their success because of their low speed and poor mechanical reliability. The enemy was usually able to rush reserve troops into the break and seal the front, necessitating a series of slow and costly break-through attacks. The infantry had no problem following the slow tanks during the attack, but was totally unprotected and suffered heavy casualties. The English proposed the Mark IX carrier, which was supposed to carry fifty infantrymen into battle protected by armor, but the design was still in prototype when the war ended.

In the years between the wars, tanks became an accepted part of all the leading armies, though the theories on their proper role and exploitation in combat differed widely. In the thirties, three main schools of thinking crystallized. The British army was experimenting with all-tank units, while the French subjugated their tanks to the tactics of their infantry formations. The German school, whose main proponent was Heinz Guderian, favored ***The Armored Formation***, an organic combination of tanks, motorized infantry and supporting units. It was argued that in order to achieve a breakthrough of enemy lines and to exploit it in depth, these ***Armored Formations*** must be fully motorized, with all the components having not only the same speed, but ideally the same cross-country capabilities as well. Moreover, the supporting units, i.e. infantry, engineers and artillery, should be protected by armor, so that they would be able to closely follow the tanks into battle without suffering excessive losses.

While the soundness of this theory was generally accepted in Germany, implementing it was another matter. German industry was hard-pressed to meet the demand for the new tanks which were needed in large numbers, and did not have enough capacity for producing armored personnel carriers. Thus, the first ***Leichte*** (Light) and ***Panzer Divisions*** (Armored Divisions) were equipped with soft-skinned wheeled transport for their infantry units. It was not until shortly before the start of the Second World War that the Panzer Divisions started getting their Armored Personnel Carriers (APCs) in any numbers. Even later in the war there were only enough vehicles to equip just one of the Infantry Battalions in each Panzer Division.

While production of a fully tracked armored personnel carrier was beyond the capacity of the German automotive industry, it was realized that a fully-wheeled vehicle would never have the necessary cross-country performance. But Germany had had good experience with half-track vehicles which had been manufactured since 1928 as gun tractors. The experience gained with these vehicles led, in 1934 and 1935, to prototypes of armored half-tracked vehicles, carrying 3.7CM and 7.5CM guns in fully rotating turrets, which were intended as tank hunters. Though interesting, they were not introduced into production, as it was rightly decided to concentrate on the development and production of tanks, which were more critically needed by the ***Wehrmacht*** (Army).

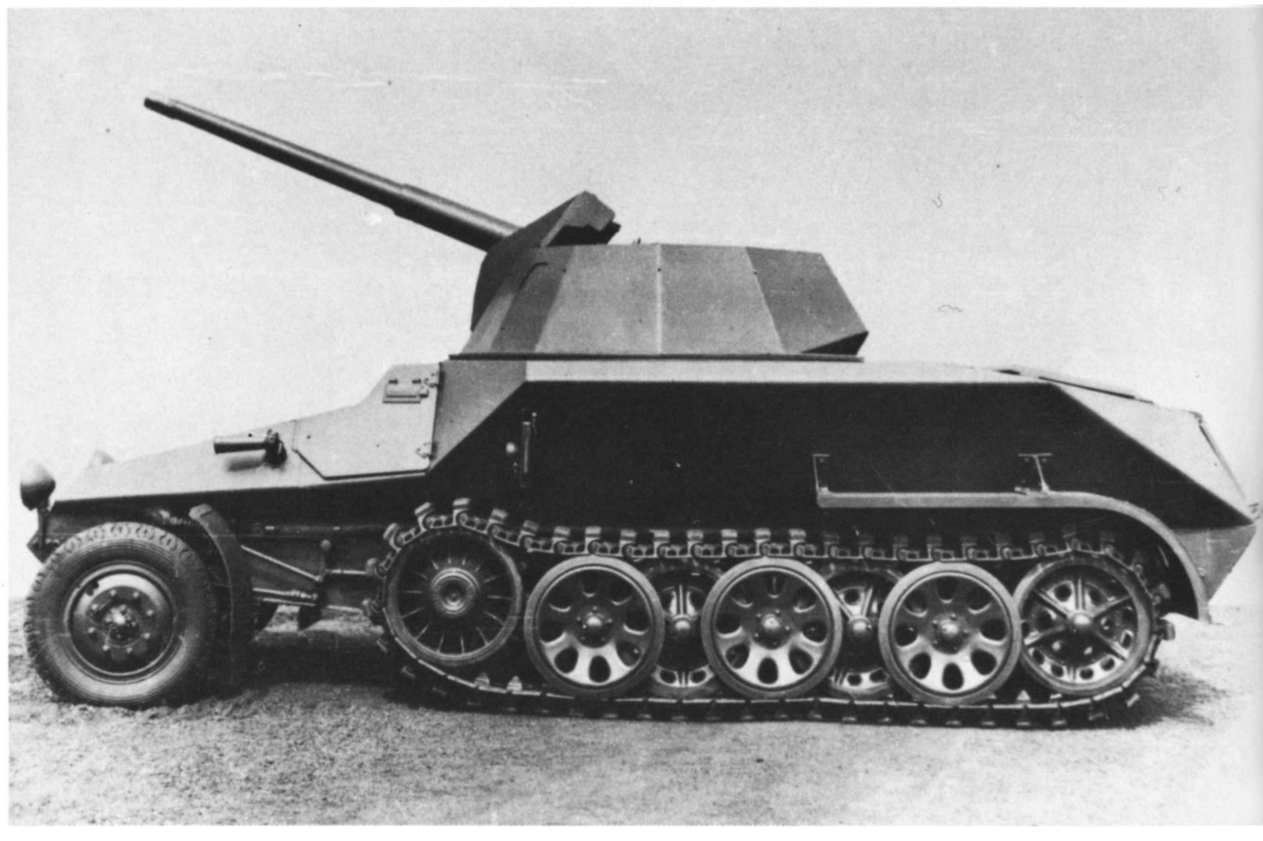
The 3-ton half-track tractor was developed originally by Hansa-Lloyd-Goliath Werke A.G. of Bremen in 1933. The first prototype of 1934 had a six-cylinder Borgward 3.5 liter engine and was designated **HL KI 2**. Actual production started in 1936 with the **HL KI 5** model and 505 tractors were built that year. Several other prototypes were manufactured with the engine mounted in the rear for the armored vehicle program, but in 1938 the final version of the tractor appeared, designated **HL KI 6**. It had a Maybach engine and was manufactured in large numbers as the **SdKfz 11**. It was well suited as the basis for an armored personnel carrier with capacity for full infantry squad, i.e. ten men, a commander and a driver.

The Hanomag company of Hannover was charged with the development of the SdKfz 11 3-ton chassis to make it suitable for fitting the armored superstructure, which was the responsibility of Bussing-NAG of Berlin-Oberschoneweide. With some minor modifications to the chassis, the first prototypes of the ***Gepanzerte Mannschafts Transportwagen*** (Armored Personnel Carrier) appeared in 1938. The 1st Panzer Division in Weimar got their first **SdKfz 251** production vehicles in the Spring of 1939, but only enough to equip one company of the Infantry Regiment. A total of 232 SdKfz 251s were manufactured in 1939, followed by 337 vehicles in 1940. Production topped 1,000 vehicles per year in 1942 and reached a maximum of 7,785 vehicles in 1944. There were never enough of these versatile and useful vehicles around to equip all the formations which should have been equipped with them.

Many other companies were pressed into producing the SdKfz 251, or ***Schutzenpanzerwagen***, as it was officially designated. Chassis were made by Adler, Auto-Union and Skoda and superstructures by Ferrum, Schoeller & Beckmann and Steinmuller, while final assembly was done by Wesserhutte, Wumag and F. Schichau.

During the war, there were 15,252 SdKfz 251 vehicles produced in four Ausfuhrungs (modifications) and 23 variants. The SdKfz 251 was the most numerous of all German armored vehicles, served on all fronts and contributed heavily to the early successes of the German Panzer Divisions.

After the war, Skoda and Tatra kept producing the SdKfz 251 under the Czechoslovak Army designation **OT-810**, with a Tatra 8-cylinder diesel engine and a completely enclosed superstructure.



The 7.5CM Selbstfahrlafette L/40.8 was manufactured by Bussing-NAG. Three prototypes were built in 1934-35, which differed in certain external features and dimensions. Armor was between 8 and 20 MM, and the weight was six tons.

SdKfz 251 Models

The first SdKfz 251 model, the **Ausf. A**, weighed 7.81 tons and was 5.8M long. It had a rigid welded frame which was further stiffened by bottom armor plates welded to it. The armored superstructure was made in two sections, bolted together behind the driving compartment. The superstructure was primarily welded. The front axle was forged and was supported by a transverse elliptical spring. Steel pressed front wheels carried rubber tires and were not equipped with brakes. The tracked suspension consisted of twelve pairs of interleaved pressed steel wheels with solid rubber tires, six pairs per side. Each wheel pair was sprung with a transverse torsion bar. The driving sprocket was in front, and the rear idler was used for tensioning the track. The track itself was composed of ribbed steel castings which were drilled for lightness. They had one driving tooth on the inside and a hard rubber pad on the outside, and were connected with pins carried in lubricated needle bearings.

The body was ballistically well-shaped and was welded from plates which varied between 6MM (bottom) and 14.5MM (front) in thickness. The engine compartment had a large double door in the top plate, which allowed easy access to the engine, and access plates to the shock absorbers in the front. The Ausf.A had ventilating flaps on the sides of the engine housing. The left one could be operated by the driver via a lever from inside the cab.

The crew compartment was open from the top, but the driver and the commander sat under an armored roof. Access to the crew compartment was provided through a large two-piece door in the rear. Two benches ran the length of the vehicle on each side. Both the driver and the commander had front visors with detachable glass blocks, and smaller side visors. Inside the hull, there were racks for rifles and various crew equipment. A canvas cover was provided to protect the crew compartment against the elements. Three vision blocks were fitted on each side, two in the infantry crew section and one in the driver/commander compartment.

The vehicle was powered by a six-cylinder in-line water-cooled engine, displacing 4,171 CC. Engines were manufactured by Maybach, Norddeutsche Motorenbau and Auto-Union. Output was 100 HP at 2,800 R.P.M. The engine was a single overhead camshaft type with two valves per cylinder. The Solex Duplex carburetor had four floats for operations on extreme gradients. The cooling air for the radiator was drawn through the grille on top of the engine cover and was expelled through the side flaps. The engine's exhaust was fed into a characteristic "pot" muffler mounted behind the front left wheel.

Torque from the engine was transmitted through a dry twin-plate clutch to the transmission which was located behind the differential. It had four forward and one reverse speeds and an auxiliary reduction gearbox with high and low ratios. Thus, the number of speeds was doubled to eight forward and two reverse.

The vehicle had a mechanical hand brake and air servo-assisted main brakes which operated internal expanding braking units inside the drive sprockets. The air compressor was mounted on the side of the engine with the air tanks under the chassis.

The vehicle had the steering wheel mounted at an inverted angle to save space. It was connected to the steering column by bevel gearing. The steering box was situated on the left side of the frame and regulated the two steering operations. At slight angles, the steering wheel turned the front wheels only, while at larger angles the brakes on the tracks were brought into operation. The steering wheel was provided with a wheel position indicator.

The vehicle could attain speeds over 50 KM/hour (31 MPH) on roads and with the 35 gallon tank mounted under the crew compartment had a range of 300 KM (190 miles).

The usually extensive crew equipment was carried in two bins on the sides of the superstructure and on brackets mounted on the side plates.

Originally, the infantry version of the SdKfz 251 carried two MG 34 machine guns on unprotected mounts at the front and the rear of the superstructure. The mounts were suitable for both ground and anti-aircraft fire, but the lack of protection for the machine-gunner was sorely felt during the Polish and French campaigns. Subsequently, an angled armored shield was developed for the forward MG with early SdKfz 251s being retrofitted.

An early Ausf.A of the 1st Panzer Division, seen fording a river in Russia during the 1941 invasion. This vehicle is lacking the MG shield. The air intake at the top front of the engine compartment is clearly visible. The SdKfz 251 had a fording depth of up to 60 CM (2 feet). (Bundesarchiv)

A rear view of an Ausf.A on the Northern *Ost* front in the Fall of 1941. The vehicle belongs to the 1st Panzer Division and is not fitted with an MG shield. Note the tactical sign on the rear plate, signifying motorized infantry. (Bundesarchiv)

An Ausf.A of the 2nd Panzer Division during the invasion of Greece in 1941. This vehicle has been retrofitted with MG shield. (Bundesarchiv)

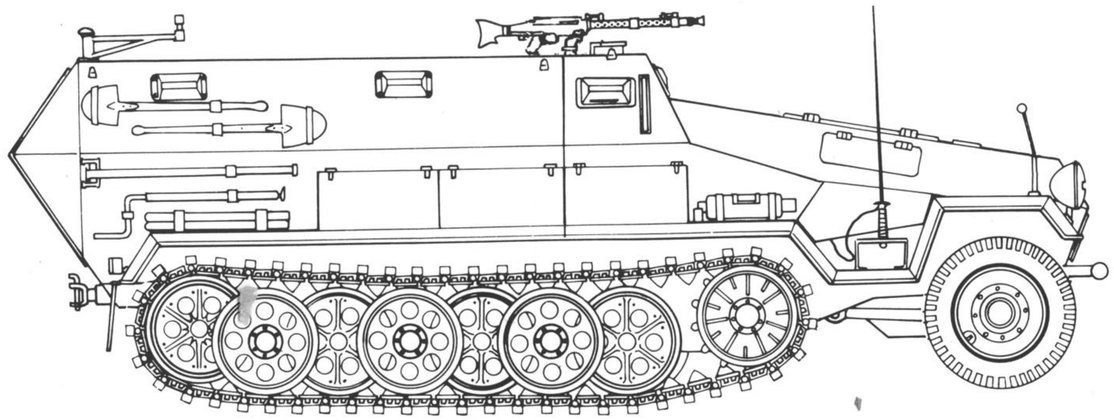
A SdKfz 251 Ausf.A, seen in France, 1940. The mounting of the radio aerial on the right front fender was standard for the Ausf.A. Canvas covers on the headlights were later replaced with black paint. The soldier carries a red and white paddle used for directing traffic. (Bundesarchiv)

This Ausf.A during 1941 in Russia has had its radio aerial relocated from the fender to the side of the fighting compartment, and the front shield for the MG34 added. (Bundesarchiv)

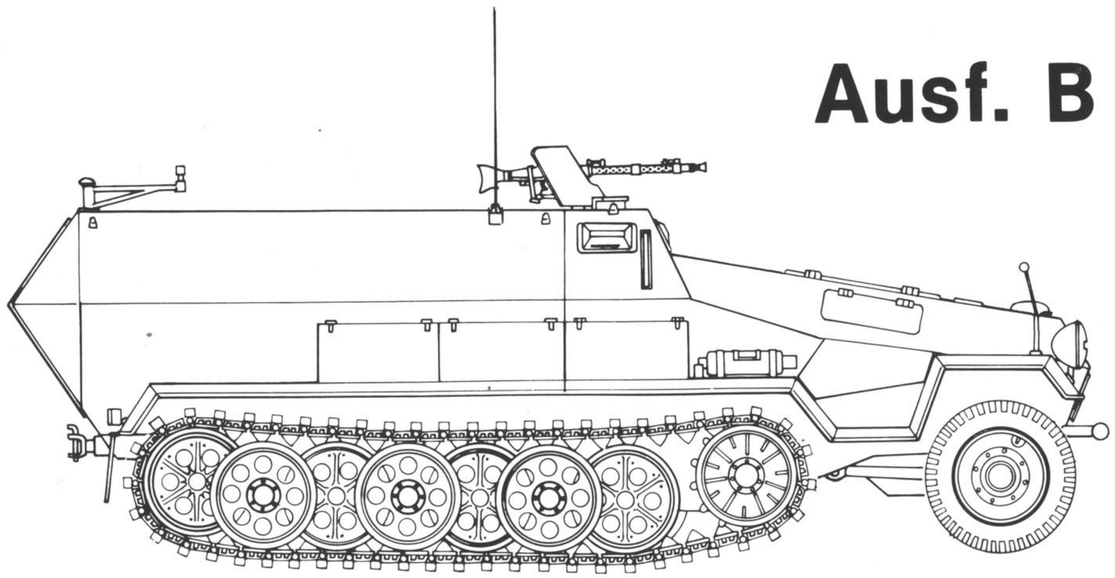
SdKfz 251 Ausf. B

Introduced in 1939 shortly after the introduction of Ausf. A, the **Ausf. B** featured many detail changes which simplified production. Though it retained the two-plate nose of the Ausf. A, it had only one vision port on each side of the superstructure, the two rear-side vision blocks being removed. The radio aerial was moved to the right front side of the superstructure. Initially the MGs were unprotected on the Ausf. B production version as well, but the majority of Ausf. B vehicles were retrofitted with the protective shield for the forward MG when they came available. Tools were still carried on the sides. Some later models were fitted with the armored cowls over the engine cooling flaps. Production of the B terminated in late 1940.

Ausf. A



Ausf. B



SdKfz 251 Ausf.Bs of the 7th Panzer Division, Panzerarmee Hoth, Armee Gruppe Mitte (Army Group Center), Russia, Summer 1941. All ventilation flaps are open during the hot weather. Extra track links are carried on the front plates, and the MG shield is fitted on the first vehicle, but not on the second. (Bundesarchiv)

This interior view of an Ausf.B shows the relatively simple equipment of the early versions. The radio is the standard Funksprechgerat F. From its early mounting on the side wall, seen here, it was later moved in front of the assistant driver. (Bundesarchiv)

This view of the assistant driver using the FuSpG "F" radio in the original location shows why the Germans moved this vehicle radio under the front visor in front of the right seat. This made it very convenient to use and avoided these contortions, as well as adding protection.

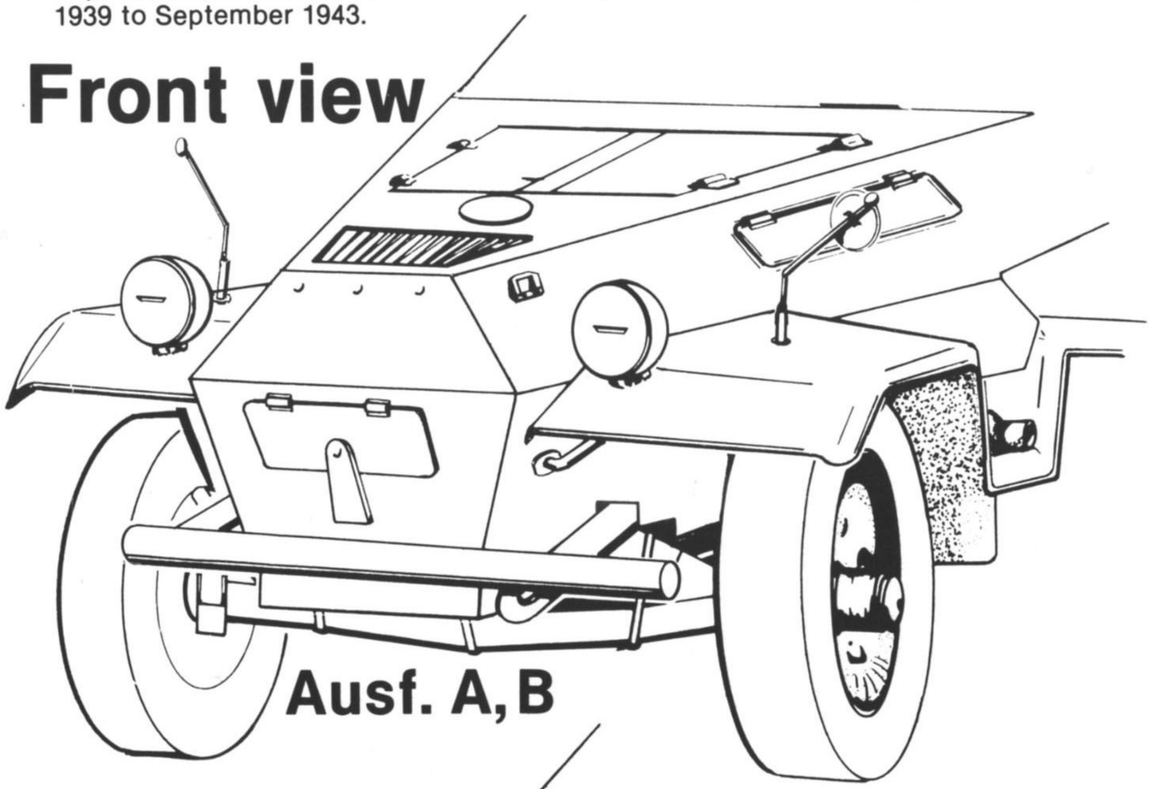
(Above Left) A SdKfz 251 Ausf.B seen during the invasion of Greece, 1941, working with PzKpfw I tanks. These seem to be "Ladungslagers" converted back to normal tanks, with only the construction on the rear deck giving away their original outfitting. This atypical SdKfz 251 carries a shield even on the rear gun. (Bundesarchiv)

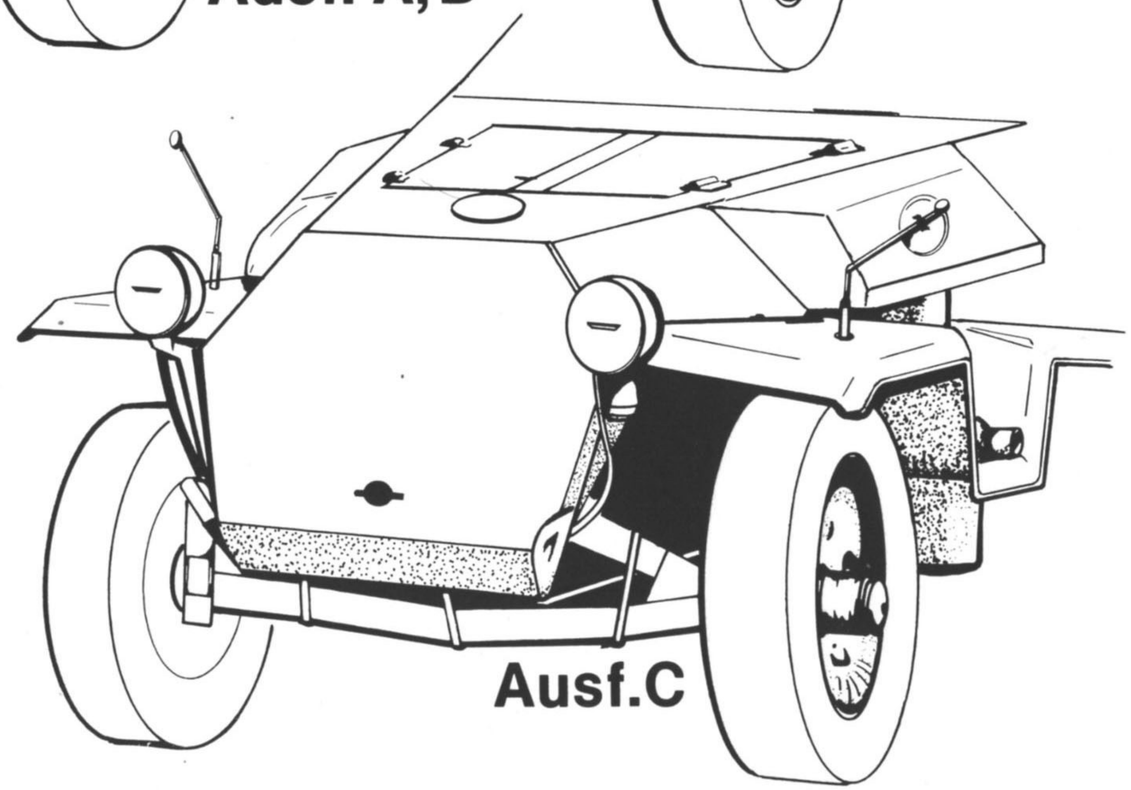
That the soldier's vehicle is his home is well-illustrated by this picture, showing the very cluttered inside of an SdKfz 251 Ausf.B. Military paraphernalia like helmets, ammo boxes and water-bottles are mixed with boxes, blankets and even a basket.

SdKfz 251 Ausf C

This version was introduced in mid-1940 and was produced concurrently with the Ausf. B. Its main distinctive feature is the straight nose plate which greatly simplified production and improved protection of the engine. The ventilating flaps were protected with armored cowls so they could be left open even under combat contions. The front MG was fitted with an armored shield and the pioneer tools were carried on the track mudguards. Again, both welded and riveted versions were produced. The interior layout was greatly improved. 4,650 SdKfz 251s of the Ausf. A, B and C versions were produced from June 1939 to September 1943.

Front view





A group of brand new SdKfz 251 Ausf.Cs awaiting delivery to various units. Clearly distinguishable from the Ausf.A and B by the straight front plate, the vehicles carry chalk-on chassis numbers on the left intake cover. (Bundesarchiv)

This Ausf.C has been painted with dried-mud camouflage and has a different outside stowage arrangement from the other vehicle. Each crew arranged its equipment to its own taste.

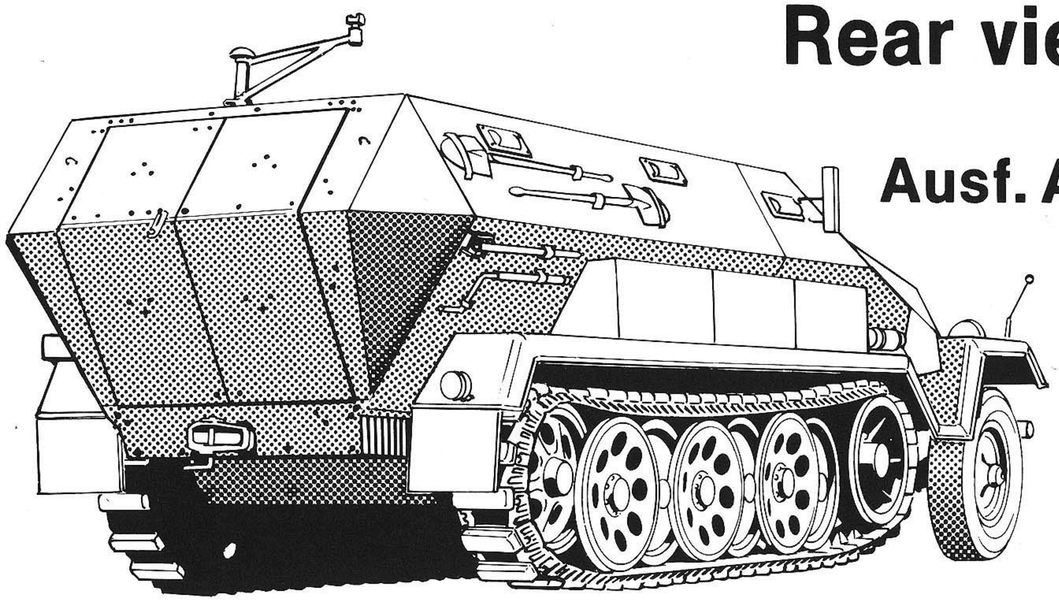
General Von Arnim's personal half-track in Tunisia, 1942. This Ausf.C belongs to the 21st Panzer Division and carries an additional cross on front plate between the visors and on the engine deck. (Bundesarchiv)

Ausf.Cs of the 24th Panzer Division wait during a river crossing in Russia, 1941. On the foremost vehicle, the rear MG is fitted with a 50-round drum magazine and anti-aircraft sights. A PzKpfw IV, a radio truck, a SdKfz 250 at the river's edge, and the well-dispersed vehicles on the far side of the river attest to the typical bottleneck that develops at bridge crossings. (Bundesarchiv)

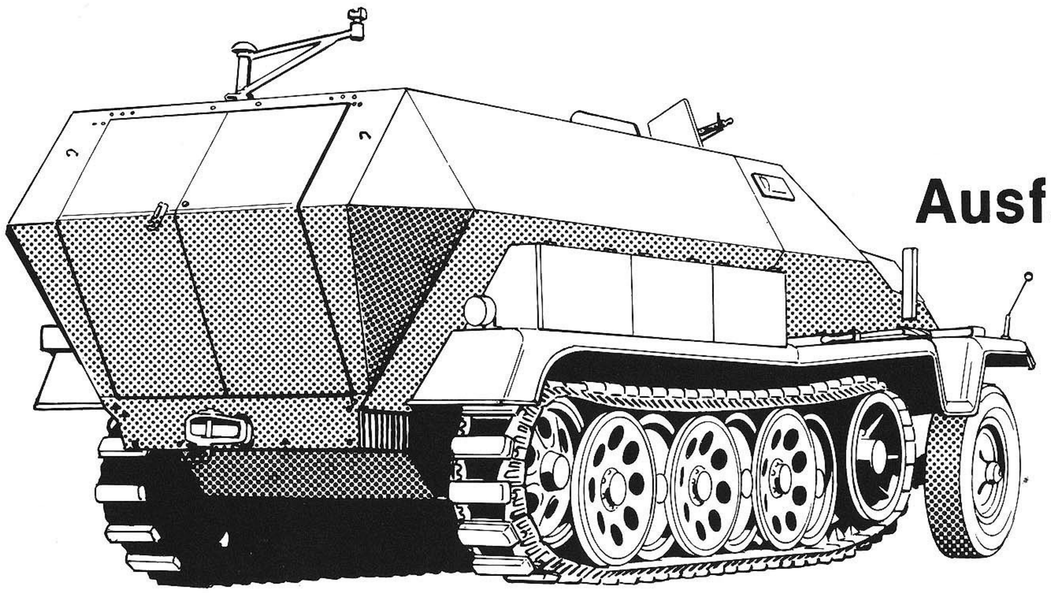
Recce vehicles of the 1st Cavalry Division near Stalingrad in the Fall of 1942. The front Ausf.C carries a cavalry saber stuck behind the towing cable! The man on top is using the artillery scissors telescope for observation. The front of both vehicles is camouflaged by white-wash. Often only the front parts were painted when supplies were short. (Bundesarchiv)

Rear view

Ausf. A, B



Ausf.C



Three Ausf.Cs of the 23rd Panzer Division are seen with some Kradschutzen (motorcycle troops) preparing to cross a bridge. Canvas covers on the MG were a necessary precaution on the dusty Russian roads. The sign says "Bridge. Slow! Drive in the middle!" (Bundesarchiv)

A column of the SdKfz 251 Ausf.Cs of the 16th Panzer Division on the Eastern front, Winter 1943. This was the second appearance of the 16th in the East, the original division was destroyed at Stalingrad. After being reformed in France it fought West of Kiev during the Winter of 1943-44 with heavy losses. Both the vehicles and crew are thoroughly camouflaged for winter conditions. (Bundesarchiv)

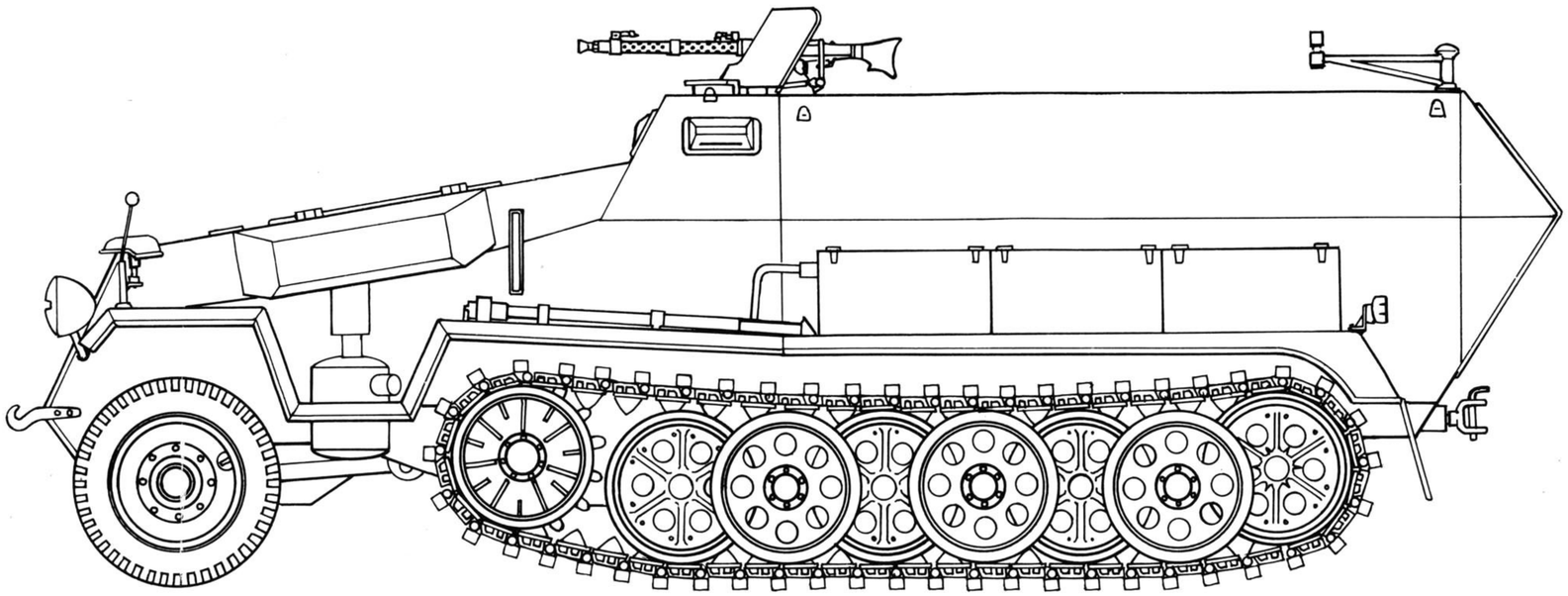
The Wehrmacht had problems with Allied aircraft in Italy, as these heavily camouflaged PzKpfw IV, Panther, and SdKfz 251 Ausf.C attests. During the day all vehicles had to be placed under trees or at least thoroughly camouflaged by branches to escape detection and subsequent attack. (Bundesarchiv)

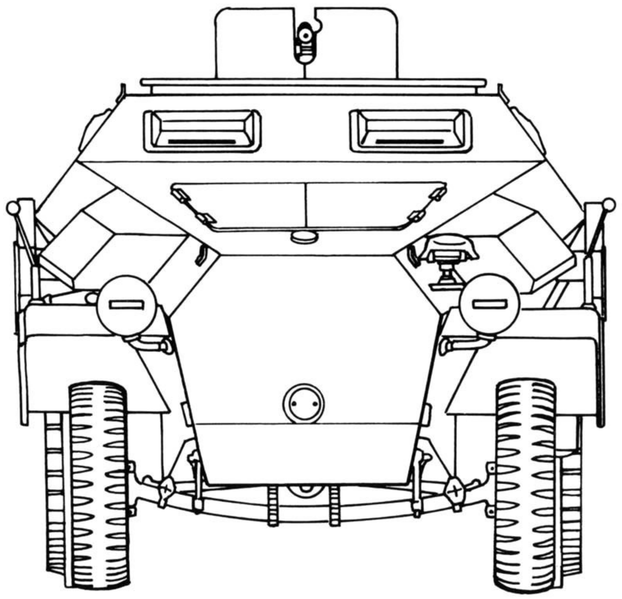
An interesting Winter camouflage, improvised from sheets, is seen on this Ausf.B. Extra stowage and equipment are carried on the side plates and rear. (Bundesarchiv)

This Ausf.C of the 24th Panzer Division in Russia carries a food container, MG ammunition box and a jerry-can on the side. The divisional emblem is visible on the side-plate of the engine. Note the number 223 below the visor.

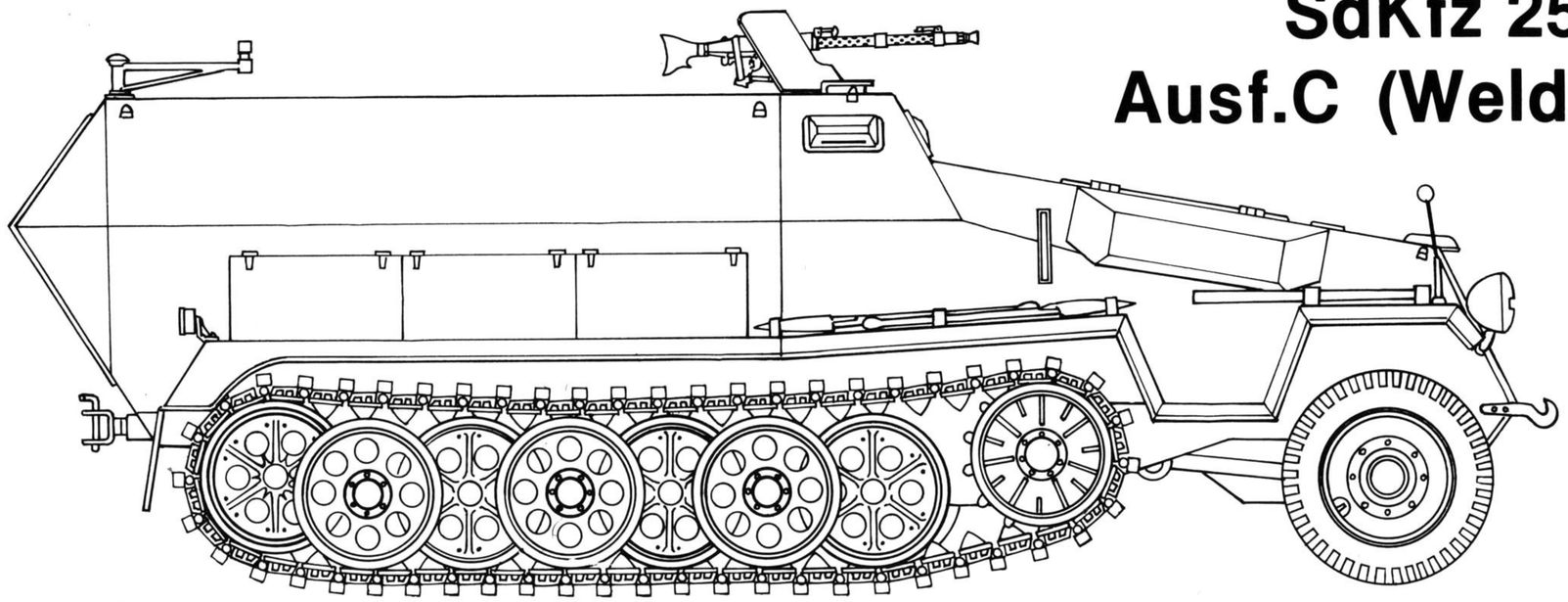
This view of the driver of a SdKfz 251 clearly shows the inclined steering wheel. Instrumentation included a speedometer, tachometer, ammeter and water temperature indicator. The left sign says "Maximum speed 45 km/hour", the right "Change oil at 3,500 km". Various idiot lights, a horn button and light switch completed the dash. (Bundesarchiv)

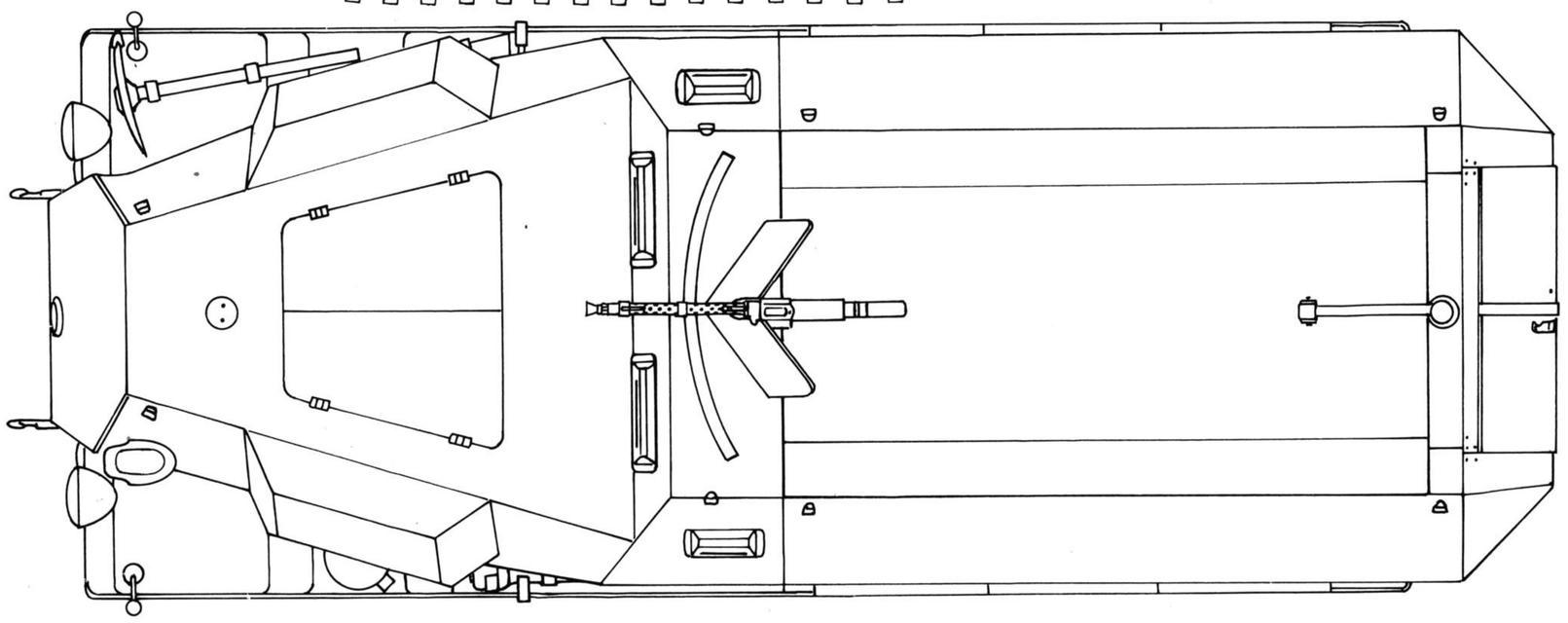
A thoroughly camouflaged battle group in Ausf.C vehicles in Russia, 1943. This sort of camouflage was becoming a necessity with more complete Allied control of the air. Pretty soon even groups like these would be almost unable to move during the daylight hours, due to heavy losses from air attacks. (Bundesarchiv)



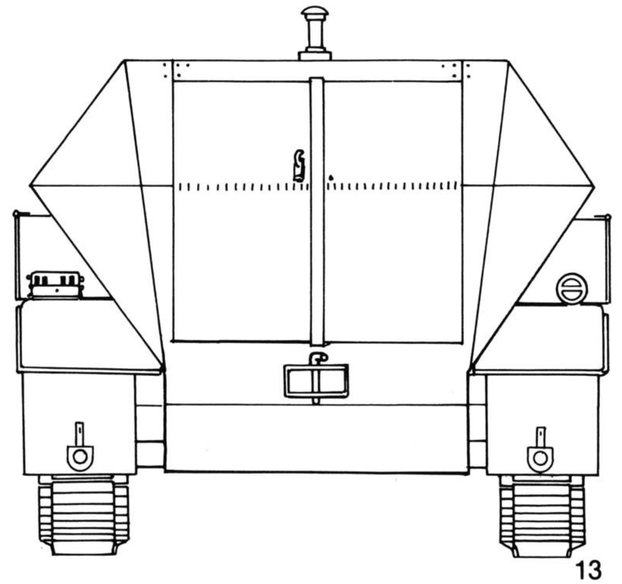


SdKfz 251
Ausf.C (Welded) Specifications





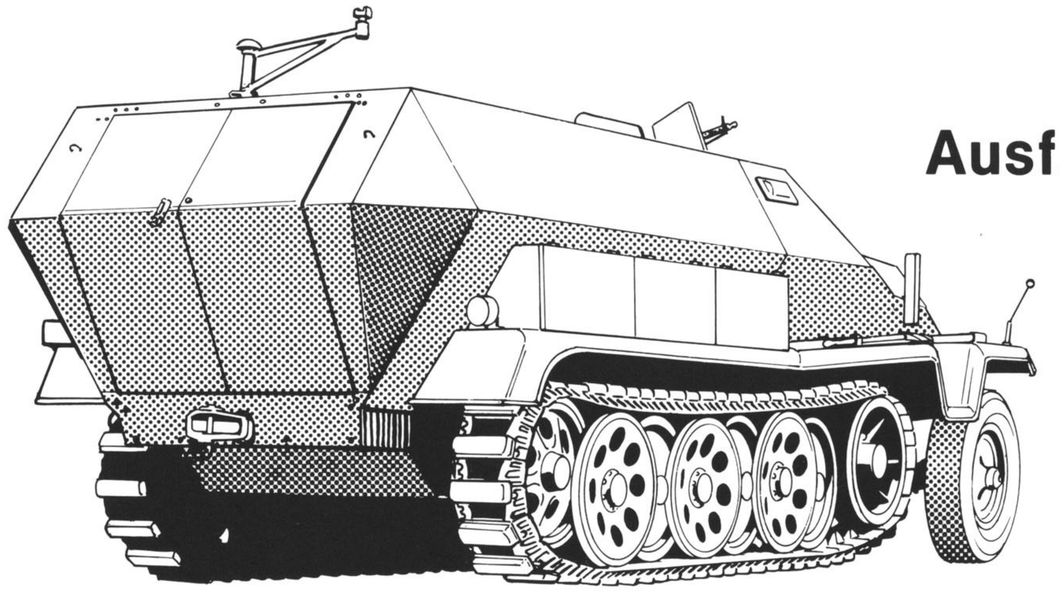
Dimensions	
Length Overall:	19 feet
Height:	5 feet, 9 inches
Width:	6 feet, 11 inches
Width over tracks/overall:	6 feet, 11 inches
Track centres/wheel base:	5 feet, 5 inches/ 5 feet, 3 inches
Track width:	9¼ inches
Performance	
Max. road speed:	33MPH
Max. gradient:	24°
Trench:	6 feet, 6 inches
Wading depth:	2 feet
Fuel consumption:	3-5MPG



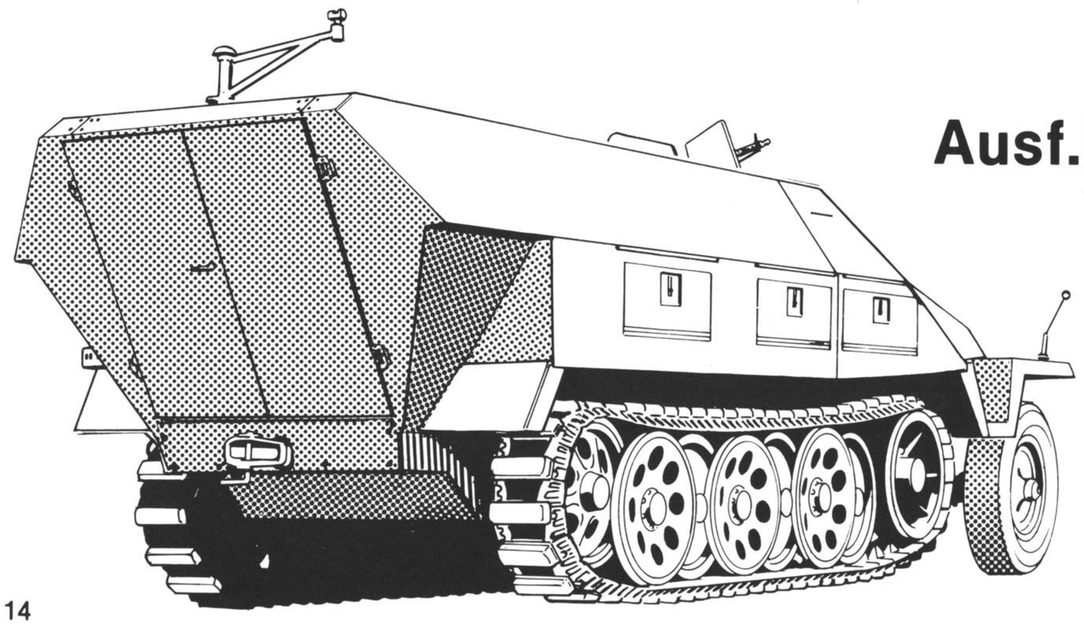
SdKfz 251 Ausf D

This last version of the SdKfz 251 was introduced in 1943. Because the Wehrmacht needed an increasing number of armored vehicles, the construction of the D model was greatly simplified to increase production. Many of the complicated features were eliminated. The result was a much cleaner looking vehicle, with a straight rear plate and simple doors, elimination of cowls for the engine air intakes, which were now concealed under straight side plates, stowage boxes built into the lower sides, and the vision ports on the sides were replaced with vision slits. Though the Ausf. D was slightly longer (5.98M) and slightly heavier (8 tons) than the Ausf. A-C, its performance remained practically the same. This was the most numerous version with 10,602 vehicles being produced up to the end of the war.

Rear view



Ausf.C



Ausf.D

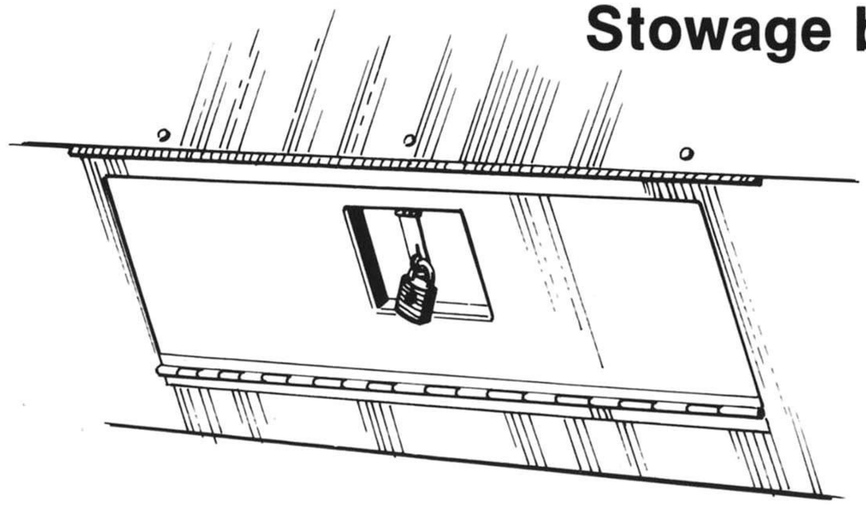
This SdKfz 251 Ausf.D moving toward the Normandy Front shows the much cleaner lines of this the last model. The straight front plate, clean engine covers, vertical sides with stowage boxes incorporated into them and the straight rear plate with the simplified doors are the characteristics of this model. (Bundesarchiv)

A SdKfz 251/7 Ausf.D of the 20th Panzer Divison. The space between the racks seems to be taken permanently, as the wooden planking is oversprayed with the camouflage pattern and the vehicle number is painted on. Here, the cleaner lines of the revised body and side stowage bins are especially evident. (Bundesarchiv)

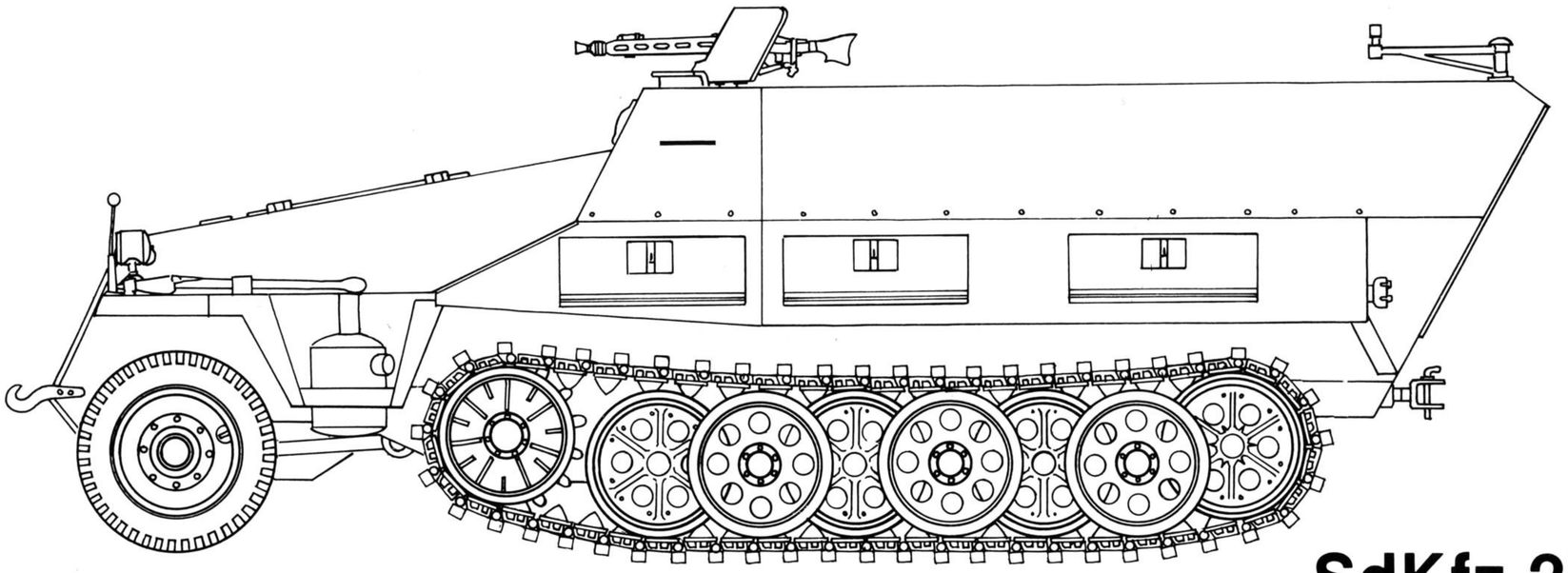
Winter, 1944 on the Western front: Jerry-cans hung on the side plate were usually used to carry water — fuel was too dangerous. This vehicle is being towed. Note the unditching beam on the left side.

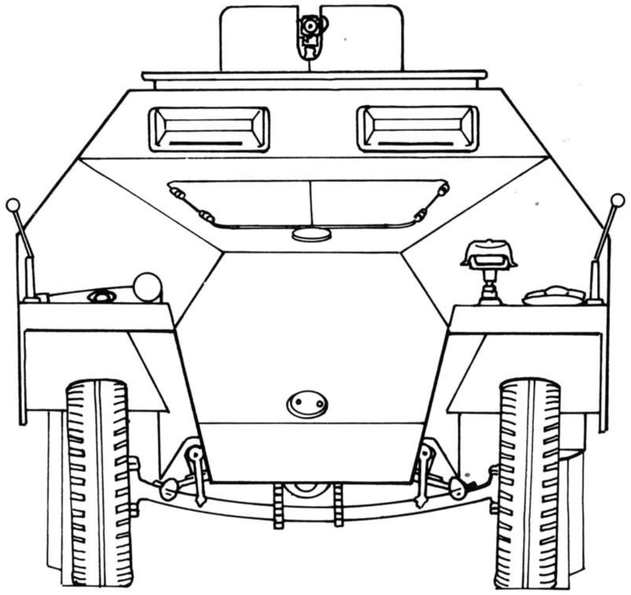
An Ausf.D leading a horse-drawn supply column, the contrast between these two types of transportation is very striking, especially in 1944.

SdKfz 251 Ausf. D
Stowage bin

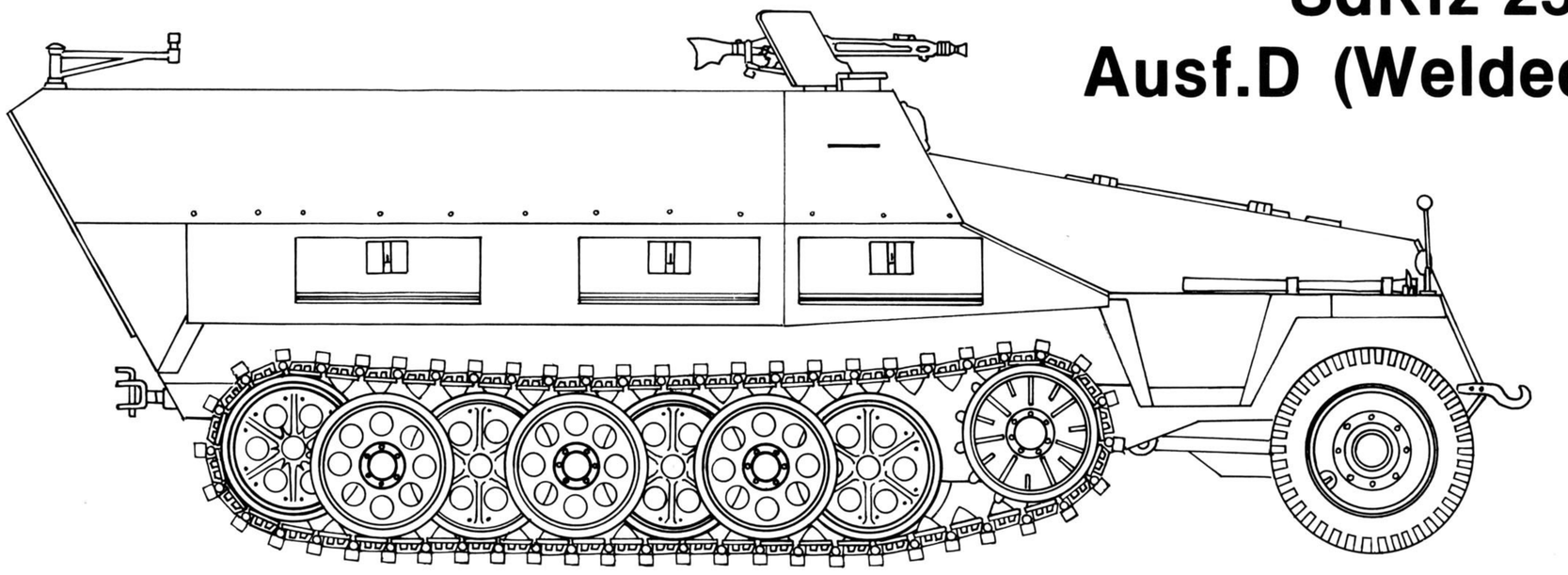


Although the SdKfz 251/4 was not in production for the Ausf.D, and as more heavy weapons like this 7.5cm PAK 40 were issued to different units, half-tracks like this vehicle of SSP.D *Wiking* had to be used as towing and crew vehicles.





SdKfz 251 Ausf.D (Welded) Specifications

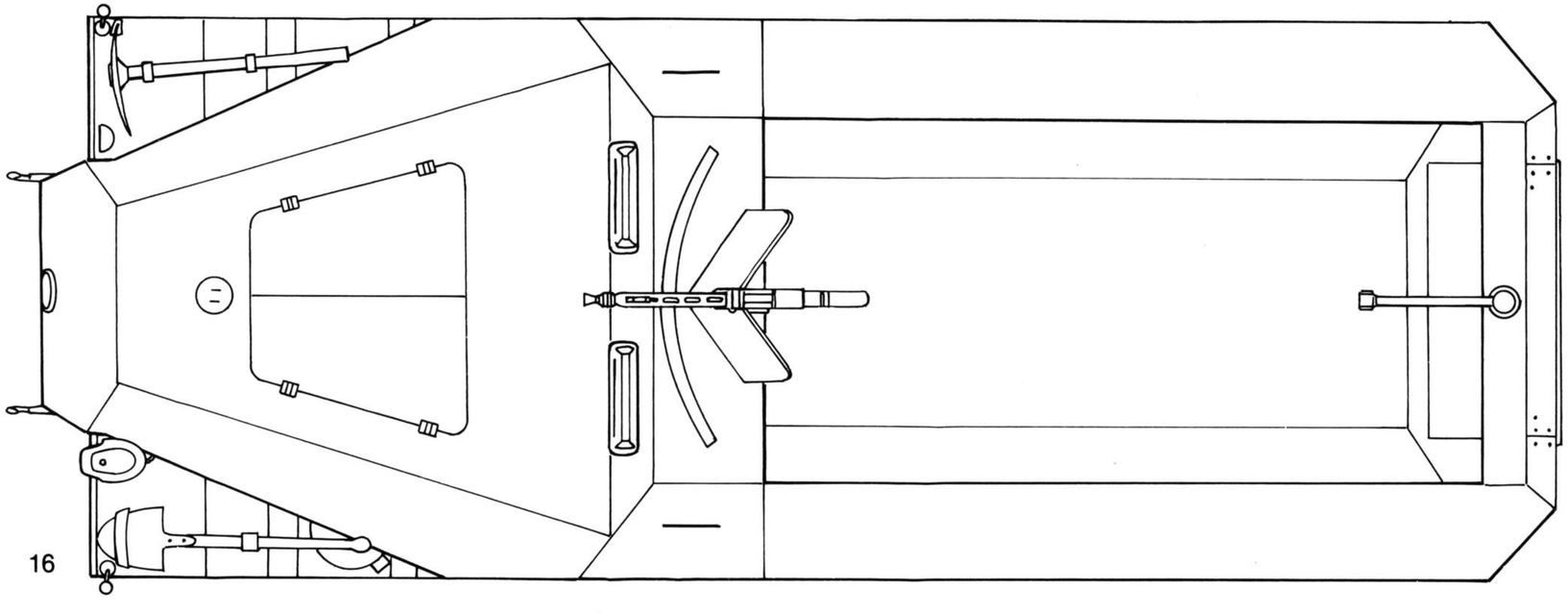


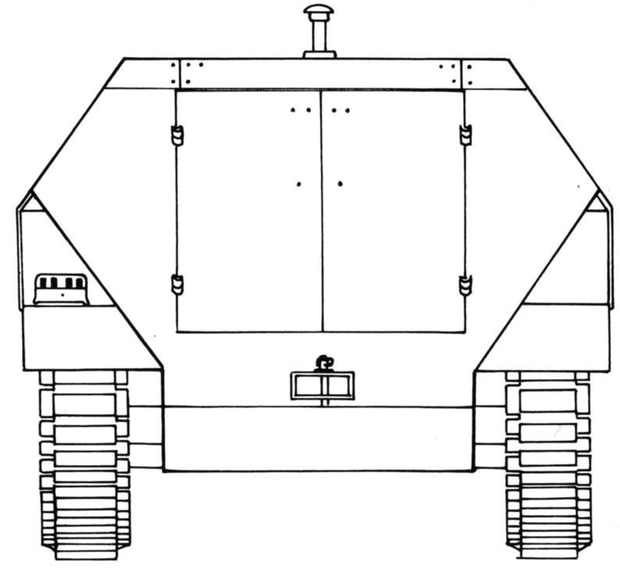
Dimensions

Length Overall:	19 feet, 7½ inches
Height:	5 feet, 9 inches
Width:	6 feet, 11 inches
Width over tracks/overall:	6 feet, 11 inches
Track centres/wheel base:	5 feet, 5 inches/ 5 feet, 3 inches
Track width:	9¼ inches

Performance

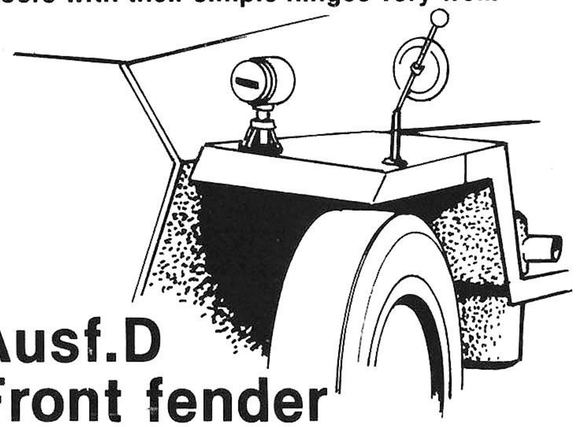
Max. road speed:	33MPH
Max. gradient:	24°
Trench:	6 feet, 6 inches
Wading depth:	2 feet
Fuel consumption:	3-5MPG





The rear of an Ausf.D with its door in an open position. The Notek rear light had four slots showing pale green light and was used for judging the distance of vehicles in a convoy at night. When the following driver saw all four slots, he was too close to the followed vehicle. If he saw one rectangle of light, he was too distant. At a correct distance, he saw two rectangles of light.

(Far Right) This inside look at the Ausf.D fighting compartment shows the straight rear doors with their simple hinges very well.



Ausf.D Front fender

A couple of white-washed Ausf.Ds seen on the Northern sector of the Russian front. The front vehicle is a SdKfz 251/10 mounting 3.7cm gun. (Bundesarchiv)

Wartime Service

When the first three Panzer Divisions were formed, they contained one tank brigade, consisting of two tank regiments (two battalions each) and one motorized infantry brigade. The infantry brigade had two battalions of motorized infantry and one battalion of ***Kradschutzen*** (troops equipped with motorcycles and sidecars). The four Light Divisions had a similar organization, but contained only one tank battalion. The motorized infantry battalions should have been provided with armored personnel carriers, but since these were not available, they had to go to war in soft-skinned wheeled transports.

When the next three Panzer Divisions were organized the number of tanks was reduced from 561 to about 320, but the infantry units were expanded to include rifle brigade of two regiments (two battalions each). The proportion of tank companies to rifle companies was changed to 12:12.

Initial experience with the APC was gained in the Polish campaign and was quickly translated into new training instructions during the Winter of 1939-1940. During the French campaign, several Panzer Divisions had one of their rifle battalions equipped with the SdKfz 251. They found that following a break-through, most of the fighting was done from their vehicles. The infantry had to dismount only when particularly stubborn pockets of resistance had to be reduced. Cooperation with the tanks not only improved and speeded the advance, but resulted in lower losses for both infantry and armor.

The four Light Divisions were reorganized into Panzer Divisions consisting of a full regiment of tanks and a rifle brigade with four battalions of infantry, one of which was equipped with SdKfz 251s.

The ***Schutzenpanzerwagen*** (SPW) came to its full utilization during the Russian campaign, when deep penetrations were achieved by tank spearheads closely cooperating with motorized infantry. The SdKfz 251 was found to be well suited to both attack and defense and usually could keep pace with the armor, for which it provided invaluable protection against close-in battle tactics. As the SPW was increasingly provided with radio transmitters, they could stay in communication at all times.

The Panzer Divisions were again reorganized in 1941. The number of tanks went down to 150-200, and the ratio of tank companies to infantry companies dropped to a ratio of 6-9:15. In July 1942 the official designation of the Panzer Division's infantry was formally changed from ***Schutzen*** to ***Panzergrenadiere***. In June 1943 the Motorized Infantry Divisions were also renamed ***Panzergrenadier Divisions*** and brought under the control of the Armored Troops. They had one tank battalion and three rifle regiments (nine battalions). These divisions were equipped with ***Schutzenpanzerwagens*** as well.

Towards the end of the war the tank strength of the Panzer Divisions declined still further, 70-80 tanks per division. The ratio of tank companies to rifle companies remained at 8:12 (much smaller tank companies). The deficits in tank strength had to be compensated by a vastly increased firepower of the Panzergrenadiere units. This trend had started as early as 1943, and by late 1944 even 120MM mortars and 7.5CM anti-tank guns were being issued down to company levels which burdened the infantry with a lot of heavy weapons and tasks which should have been performed by the tank units.

The SdKfz 251 soldiered faithfully right through the end of the war in many roles and with many diverse units. The basic design was not ideal since it was found that a proper armored personnel carrier should have allowed its infantry to fight from the vehicle, while at the same time being afforded full armored protection. This the SdKfz 251 did not provide, but neither did any of the armored personnel carriers of the other combatants. The open top of the vehicle allowed good visibility, but added to the vehicle's vulnerability, especially in confined areas and during street fighting.

The cross-country capability of the 251 was not quite satisfactory either. One big drawback was the unpowered front axle, and another was the design of the interleaved road wheels which could easily be jammed by mud and snow.

Despite these shortcomings, the SdKfz 251 was a good vehicle which proved to be a classic partner of the tank. Side by side, they fought on all fronts with great distinction and pioneered the tank - APC close cooperation which is now the basis of all modern armor doctrine.

Besides the basic infantry personnel carrier, the SdKfz 251/1 (already described), there were over 20 additional special purpose variants designed for specific tasks. In this regard, the SdKfz 251 proved to be the most versatile armored vehicle in WWII. The variants of the SdKfz 251 will be covered in order. Since most of these versions were built on more than one body type (Ausf. A-D), all the models of a particular variant will be illustrated in each version's section.

Three SdKfz 251/1s of the 1st Panzer Division during the 1941 invasion of Russia. The first two mount SMG 34's without MG shields. During marches, sundry equipment was carried outside the vehicles, including the fascines seen here. (Bundesarchiv)

The front MG 34 mount and shield on the Ausf.B. The gun was complete with a bipod and was easily removed for use outside the vehicle. This vehicle is in the southern sector of the Eastern front, Winter 1943. (Bundesarchiv)

(Above Right) Ausf.Bs of the 8th Panzer Division, seen covered with branches. Track links are being carried on front, MG shields are fitted, and extra equipment is carried on the outside.

A riveted Ausf.C of the 10th Panzer Division seen in Tunisia, 1943, followed by a captured US M-3 half-track. This specimen carries a heavy MG section (squad). The vehicle was originally Field-Gray and was oversprayed in Sand. Note the dark Gray background to the divisional and tactical signs on the front plate. (Bundesarchiv)

An Ausf.C of a heavy MG section. The front MG lacks the shield and is mounted on the heavy MG mount with a sighting telescope. Dried mud camouflage is clearly visible on this vehicle, Stalingrad, Fall, 1942. (Bundesarchiv)

Three Ausf.Cs of a heavy MG company, with SMG mounts — on the Stalingrad front, during late Fall 1942. Note the worn-off white paint. In the background is a SdKfz 10/4 2 CM Flak gun. (Bundesarchiv)

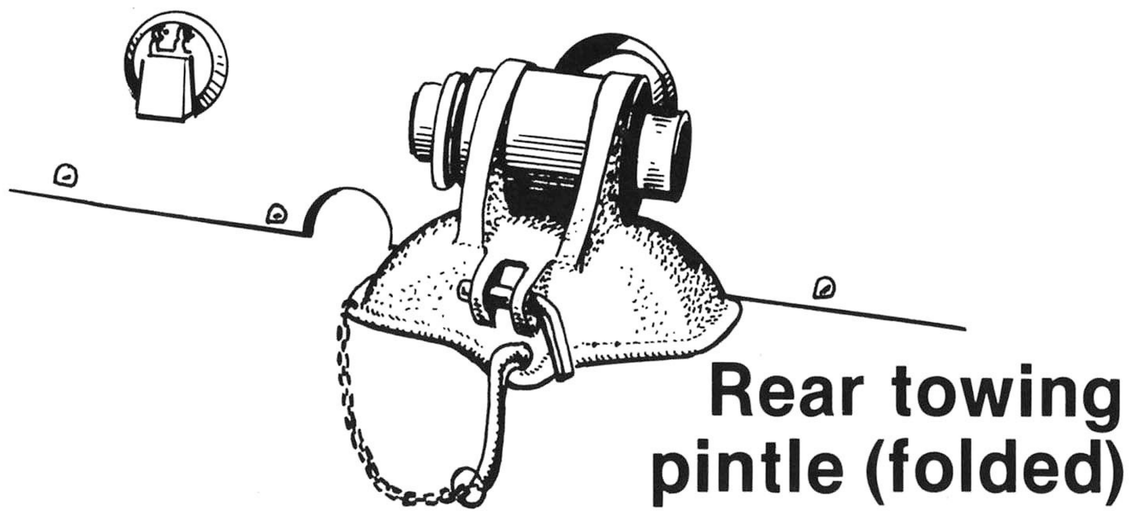
A combined battle-group — four SdKfz 251 Ausf.Cs, one SdKfz 251/10 mounting a 3.7 CM gun, a SdKfz 250/3 command vehicle and a PzKpfw II — on the open Russian steppe.

A disabled Ausf.C under tow shows a daubed mud camouflage pattern. This vehicle carries jerrycans on the front plate and the spare track links on the left fender.

(Above) An Ausf.D passes a destroyed British M-5 halftrack in France, 1944. Very heavy camouflage from branches nearly prevents the driver from seeing the road.

(Above Left) A White-camouflaged Ausf.D on the Eastern front, Winter 1943-44. Upkeep and maintenance of all vehicles under these brutal conditions required a tremendous amount of time and effort. (Bundesarchiv)

(Left) Russia, 1944. While the Ausf.A and B were spearheading the Blitzkrieg thrusts deep into the Soviet Union in 1941, by 1944 Ausf.Ds were fighting desperate retreat actions. (Bundesarchiv)

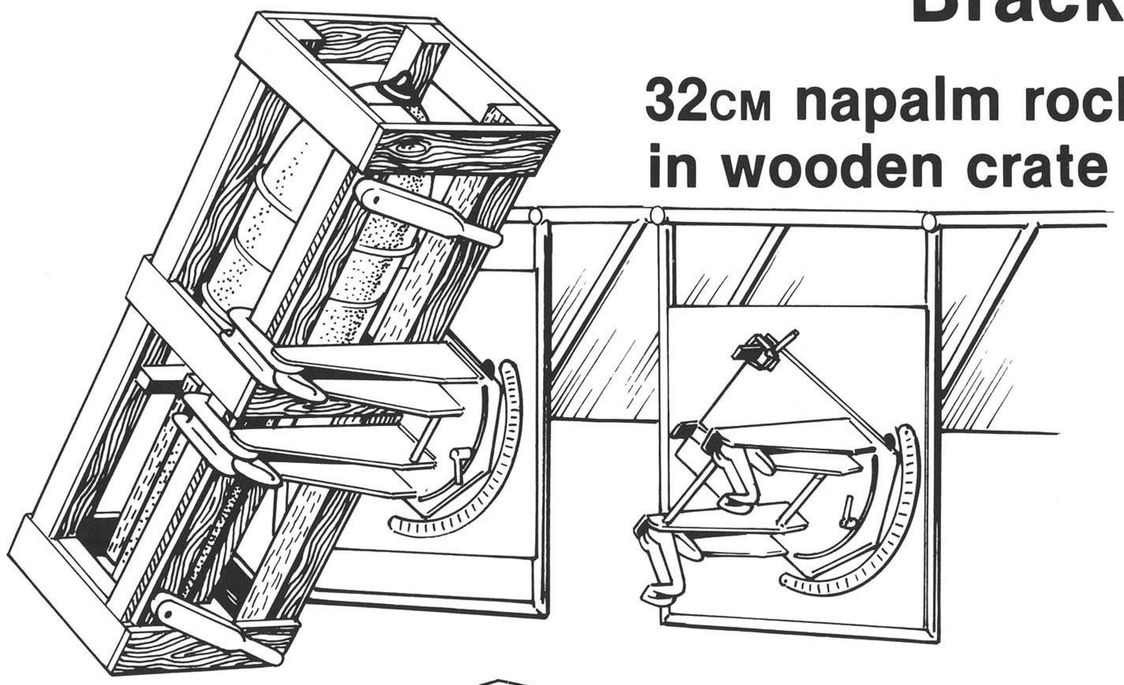


Normandy, 1944. This Ausf.D sports a thorough sprayed-on camouflage. Its top is again concealed by branches. Note the tactical sign stencil. (Bundesarchiv)

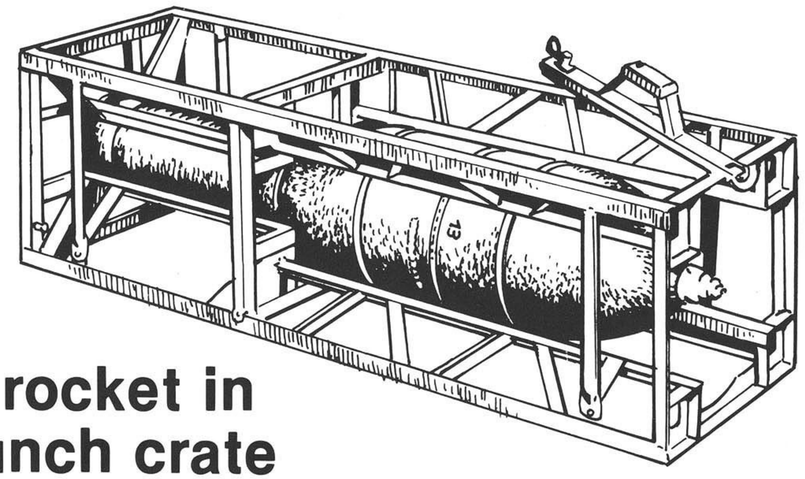
SdKfz 251 Variants

The SdKfz 251/1 ***Mittlerer Schutzenpanzerwagen mit Wurfrahmen*** was a standard SdKfz 251 equipped with externally mounted racks for heavy close-range rockets. Two projectiles were used, the 28cm rocket with TNT and the 32cm rocket with jellied gasoline (napalm). These rockets provided ***Panzergrenadiers*** with close-support fire power, which proved especially valuable during street fighting. The rockets were mounted in wooden or metal frames, which were attached to adjustable base plates on the vehicle. Direction was provided by pointing the whole vehicle, which had sighting vanes on the engine cowl, and range by changing the angle of the frames on the base plates. Maximum range was 2,300m. The rockets were fired electrically from the vehicle. A crew of seven men was carried.

Wurfrahmen Launcher Bracket



32cm napalm rocket in wooden crate



28cm HE rocket in metal launch crate

The Wgr. Z 50 fuze was a point detonating or graze-action type. During transport it was secured by a pin which was removed before firing. The fastening of the Wurfrahmen on the vehicle base plate is clearly visible. (Bundesarchiv)

This Ausf.B has one rocket fitted on the center rack. The 28cm projectile carried 110 lbs of TNT up to 2,300 yards, the 32cm one contained eleven gallons of jellied gasoline. (Bundesarchiv)

An Ausf.B belonging to an engineer's unit. The sighting vanes on the front of the engine compartment are clearly visible. They helped the driver to align the vehicle properly before firing. (Bundesarchiv)

Aiming sights

(Right Lower) Another Ausf.C *mit Wurfrahmen* in Russia shows the sighting vanes clearly in silhouette. Here the rocket mounting brackets are folded up. (Bundesarchiv)

This Ausf.C in White winter paint carries the metal *Wurfrahmen* with the 28cm HE rockets. These vehicles were developed to provide necessary firepower to panzergrenadier units, especially in street fighting. They were called by the appreciative infantry *Stuka zu Fuss*, which can be loosely translated as Stuka on call. (Bundesarchiv)

A fully loaded Ausf.C of the 24th Panzer Division in Russia, 1941. The rockets were stabilized in flight by spin rotation induced by the angled position of the rocket engine jets. (Bundesarchiv)

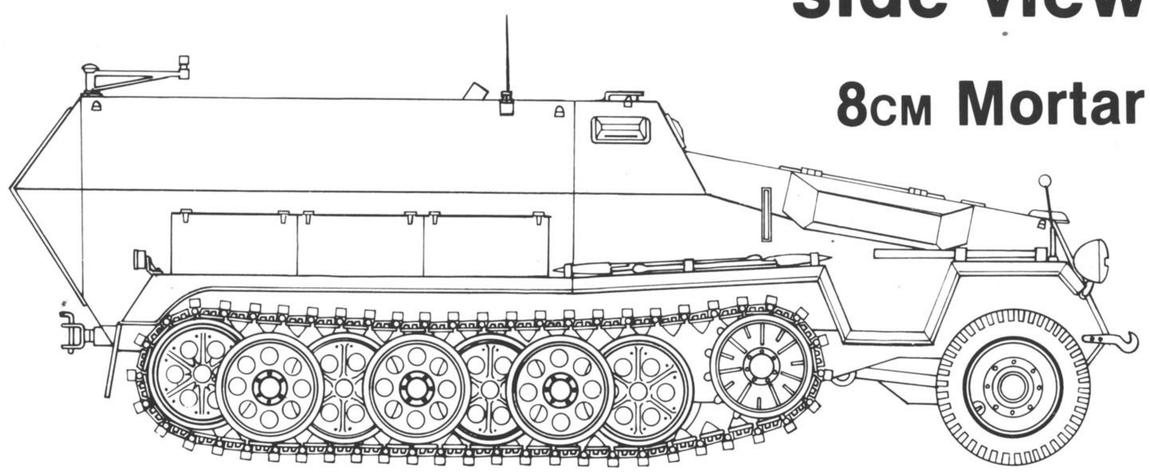
An Ausf.D with empty base plates on the Eastern Front during the Summer of 1944. This vehicle is sprayed in a three-tone camouflage pattern and carries a Red and White call number. (Bundesarchiv)

SdKfz 251/2

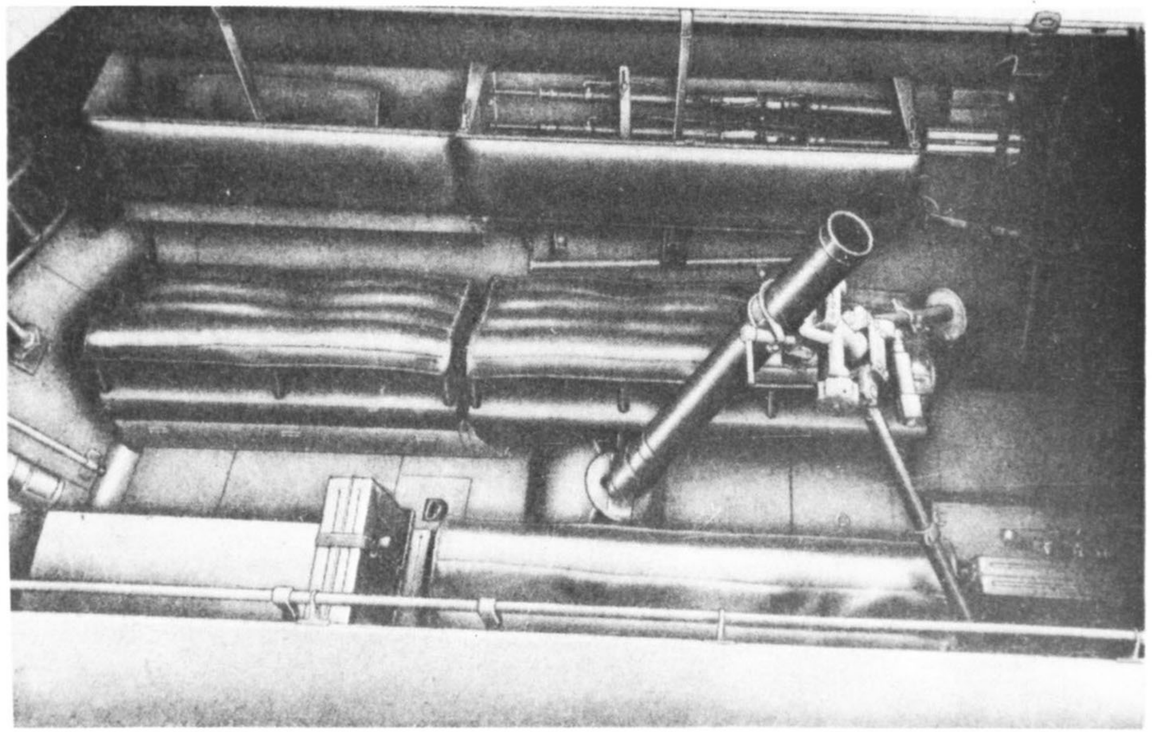
The SdKfz 251/2 ***Mittlerer Schutzenpanzerwagen - Granatwerfer*** carried the 8cm mortar 34, which was placed in the vehicle so that it fired forward over the cab. Ammunition, the mortar base plate for firing outside the vehicle, and a crew of eight men were carried in the vehicle. The front MG was eliminated on this variant.

SdKfz 251/2 side view

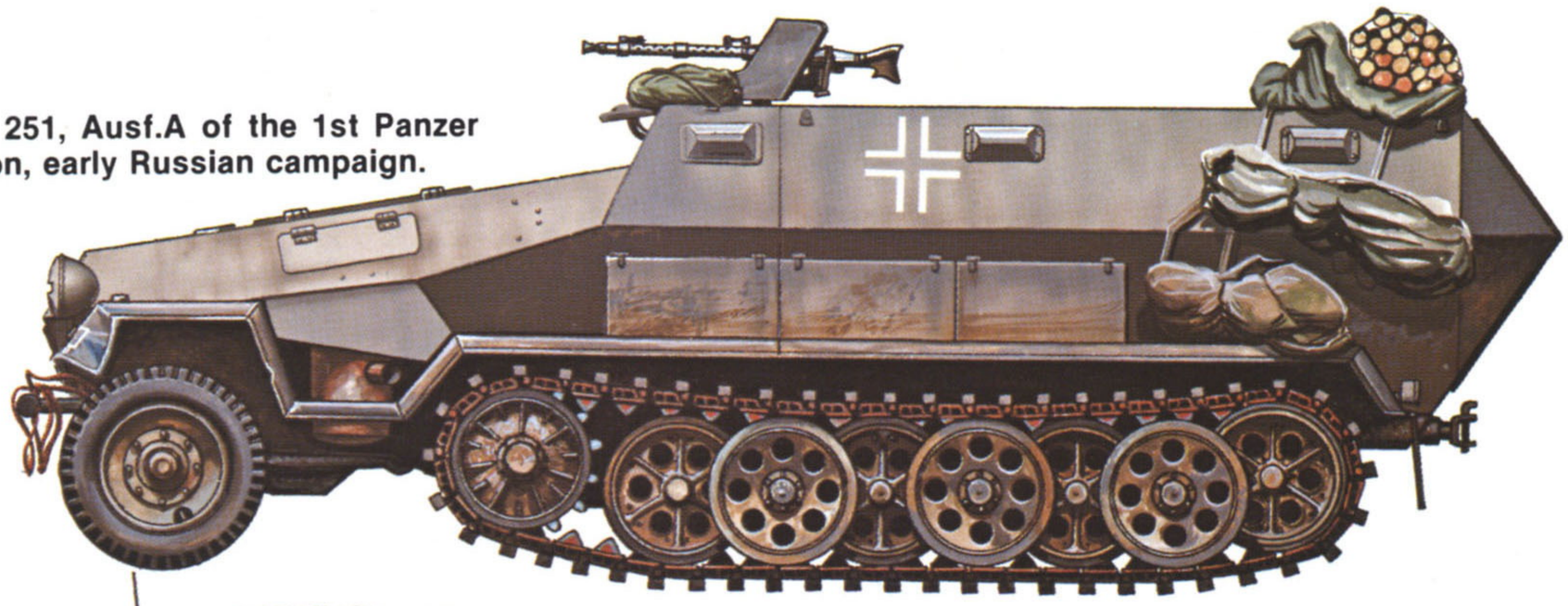
8cm Mortar



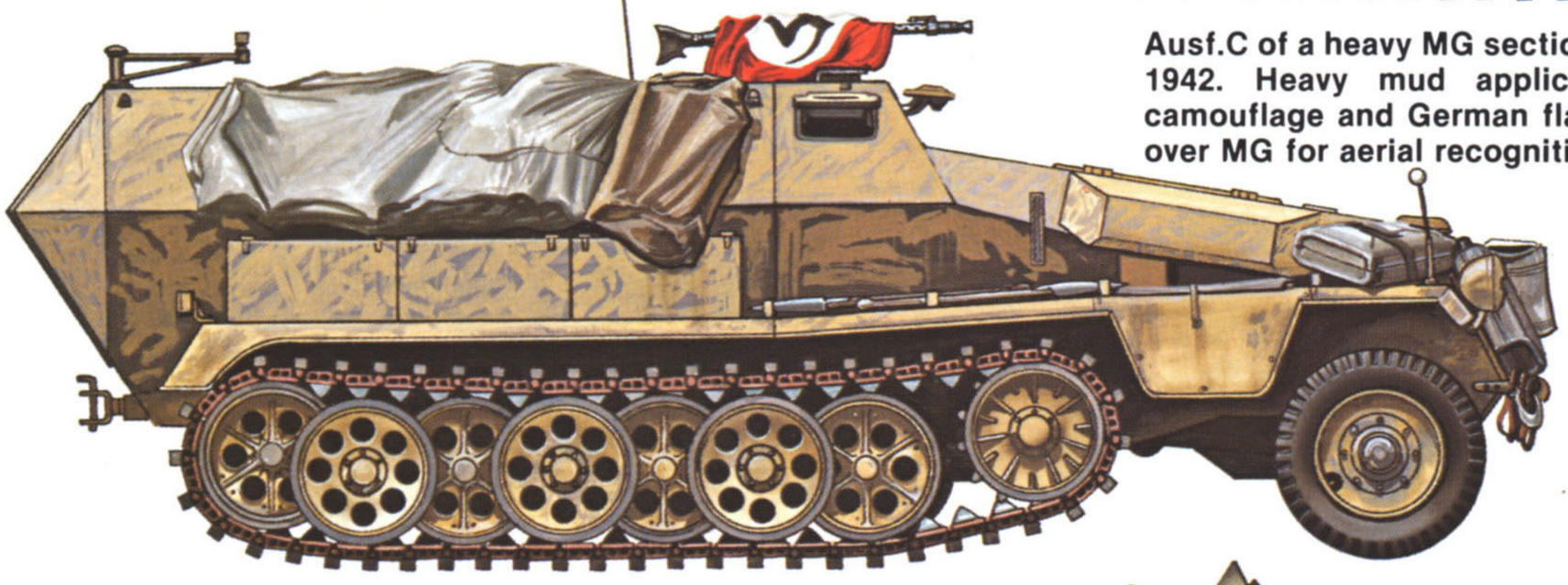
The interior of the SdKfz 251/2. The mortar was placed to fire forward over the driver's compartment. A base plate for firing outside the vehicle was carried. The mortar fired a 7.8 lb round up to 2,600 yards.



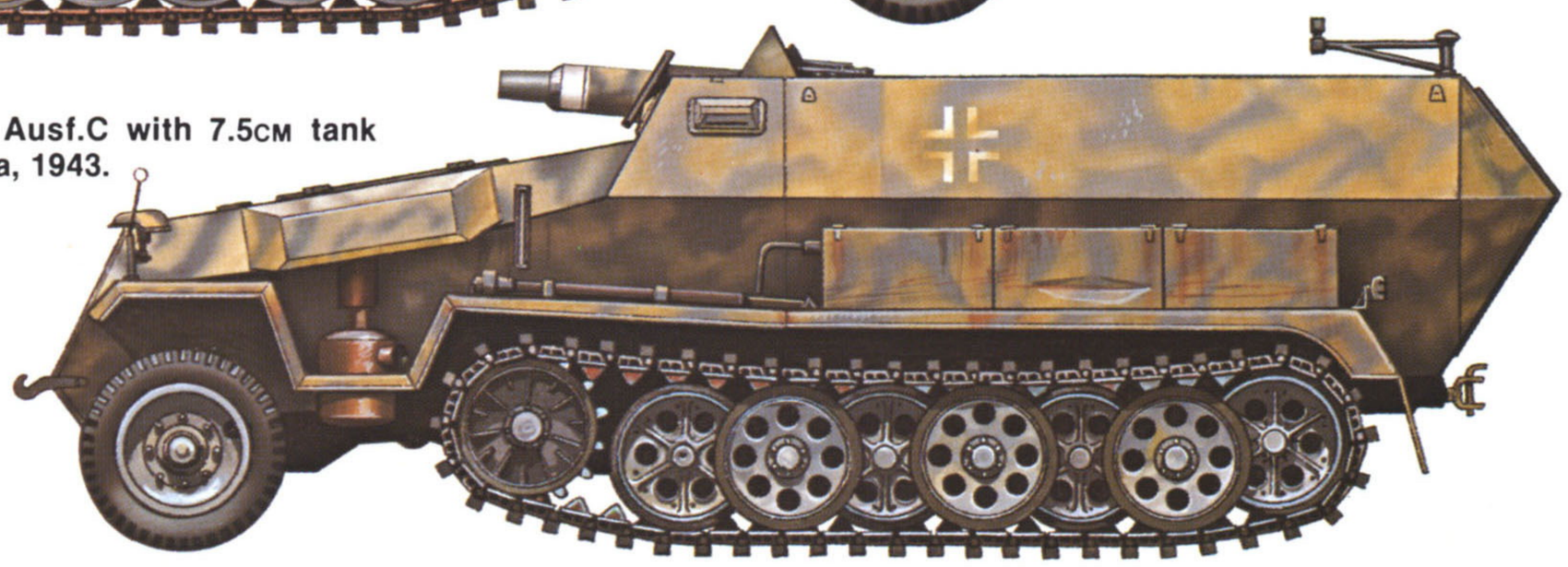
SdKfz 251, Ausf.A of the 1st Panzer Division, early Russian campaign.



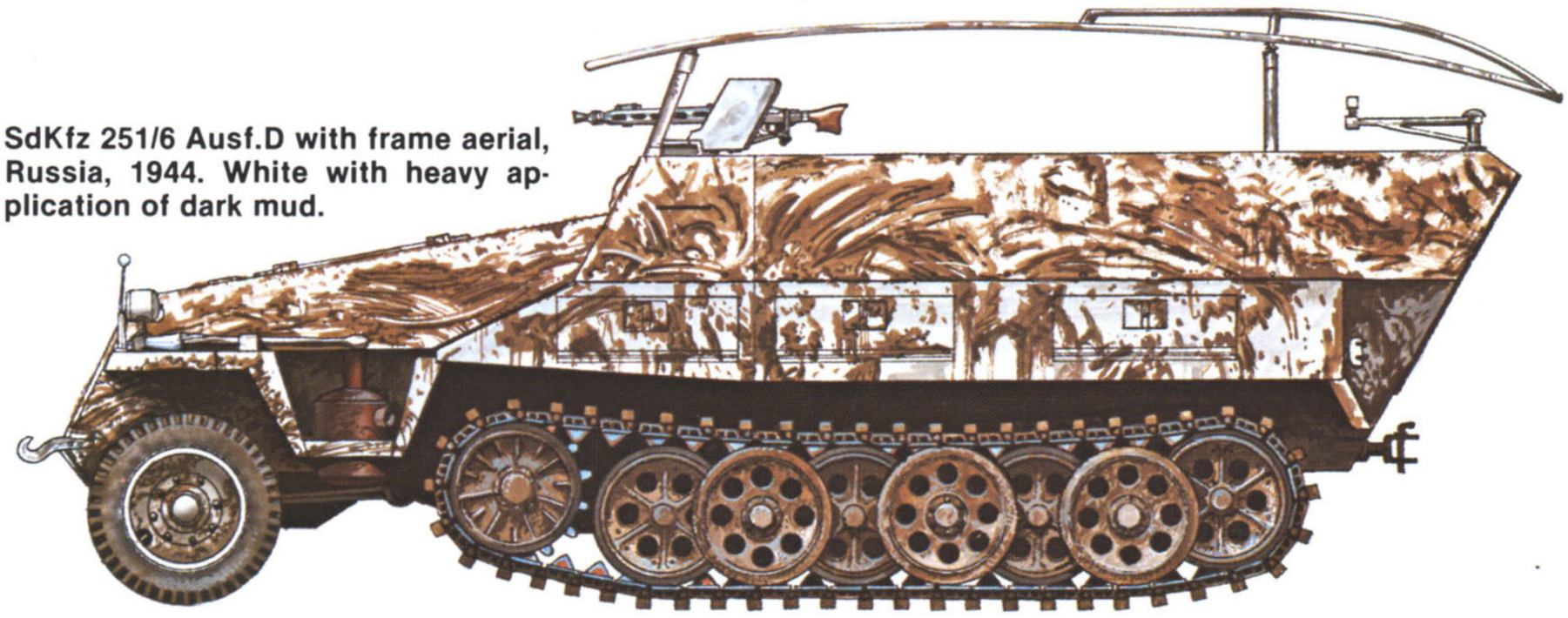
Ausf.C of a heavy MG section, Russia 1942. Heavy mud application for camouflage and German flag draped over MG for aerial recognition.



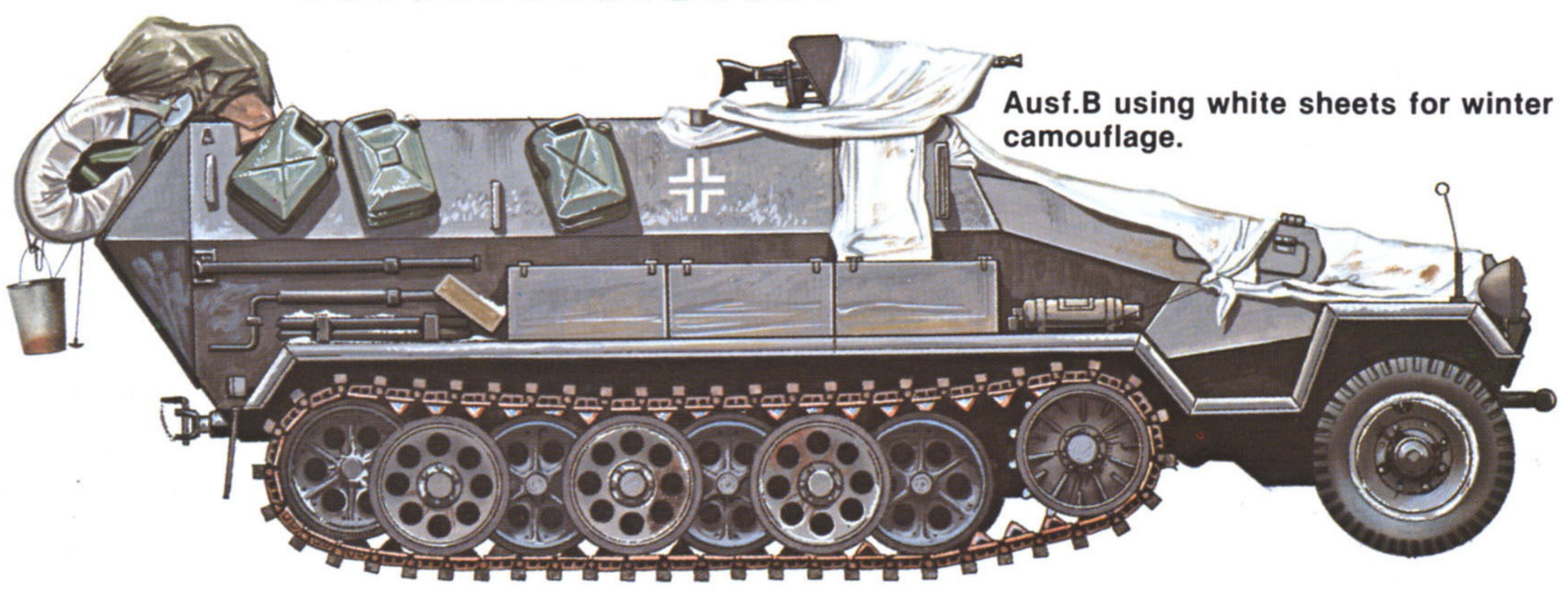
SdKfz 251/9 Ausf.C with 7.5cm tank gun in Russia, 1943.

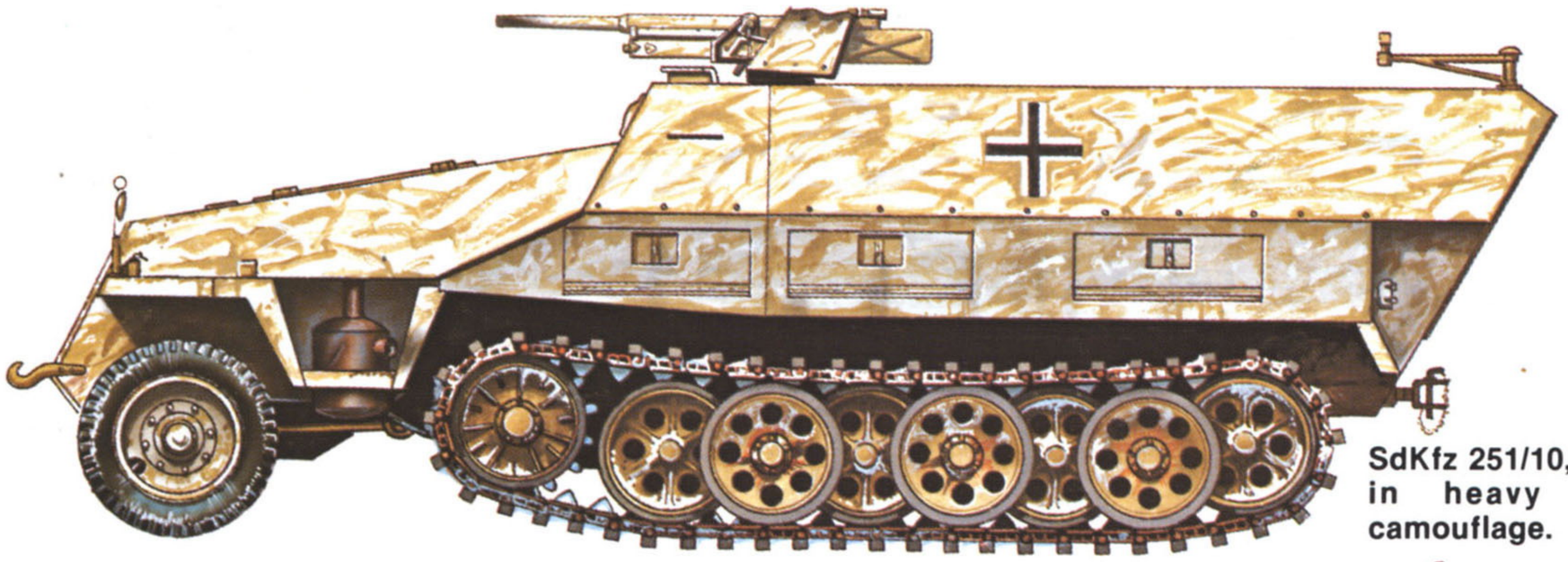


SdKfz 251/6 Ausf.D with frame aerial, Russia, 1944. White with heavy application of dark mud.



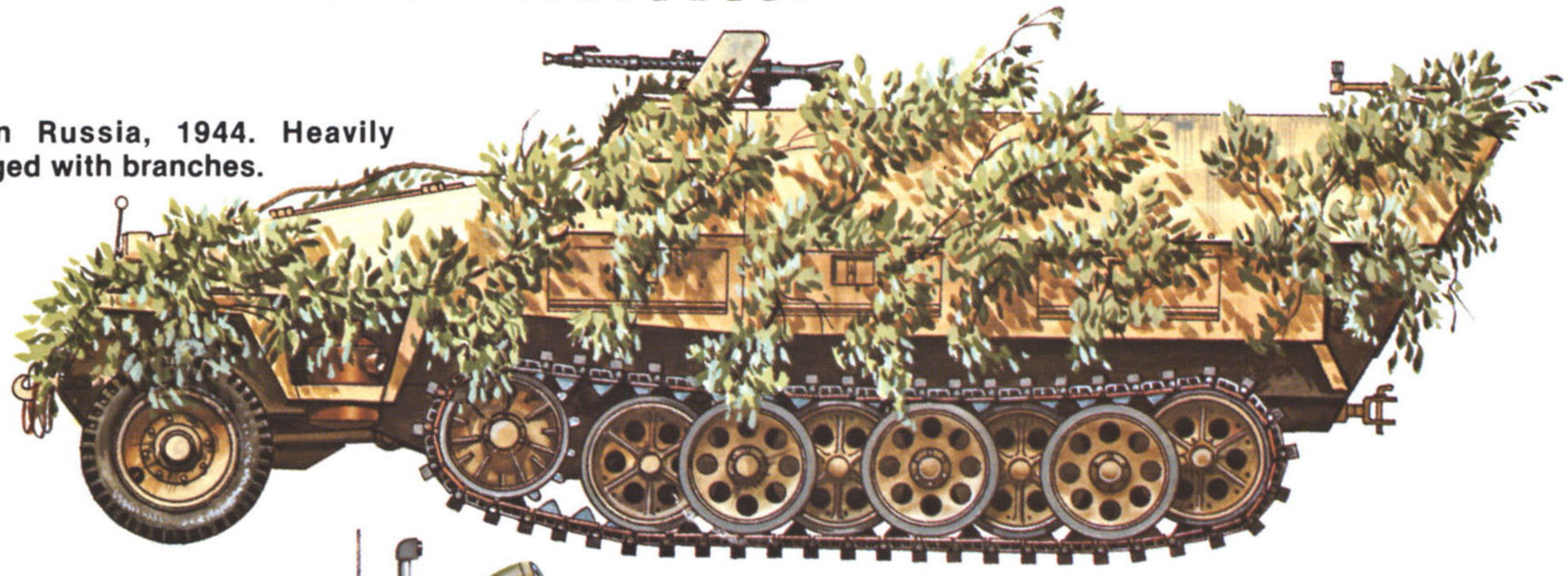
Ausf.B using white sheets for winter camouflage.



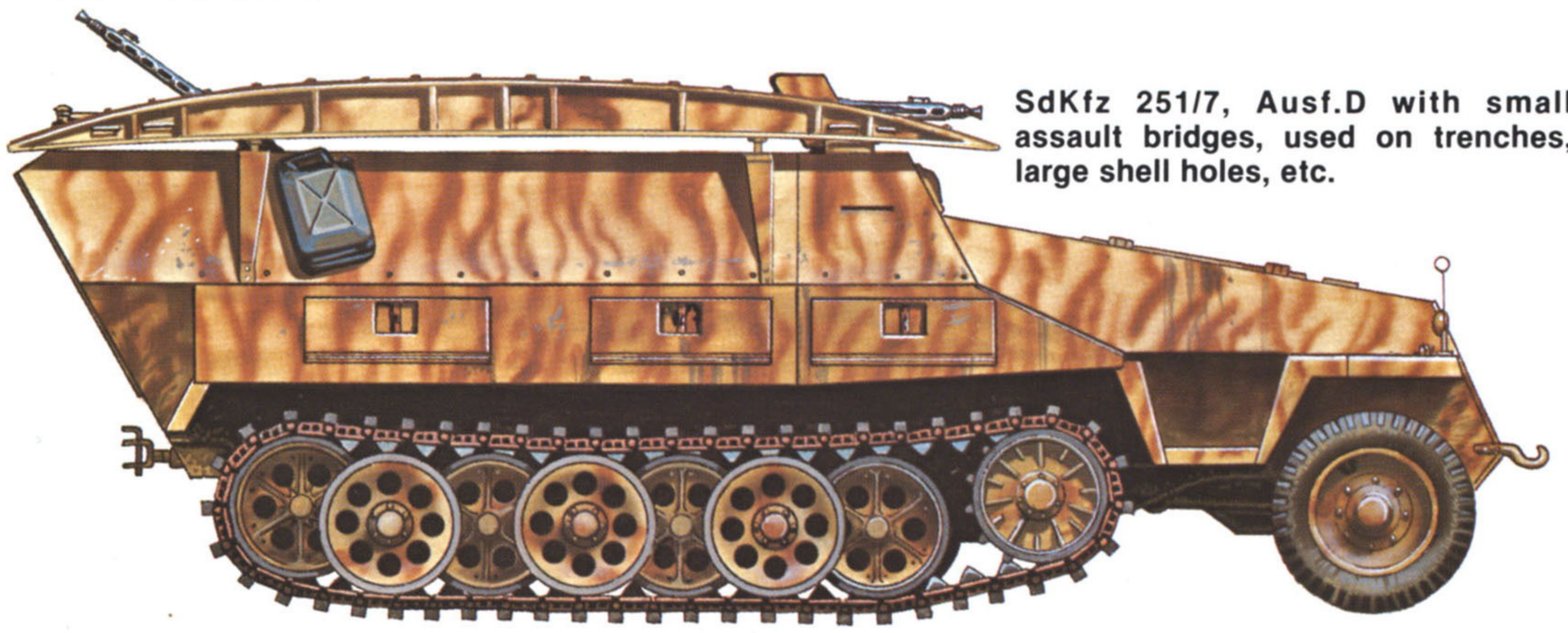


SdKfz 251/10, Ausf.D with 3.7cm PAK in heavy white-wash winter camouflage.

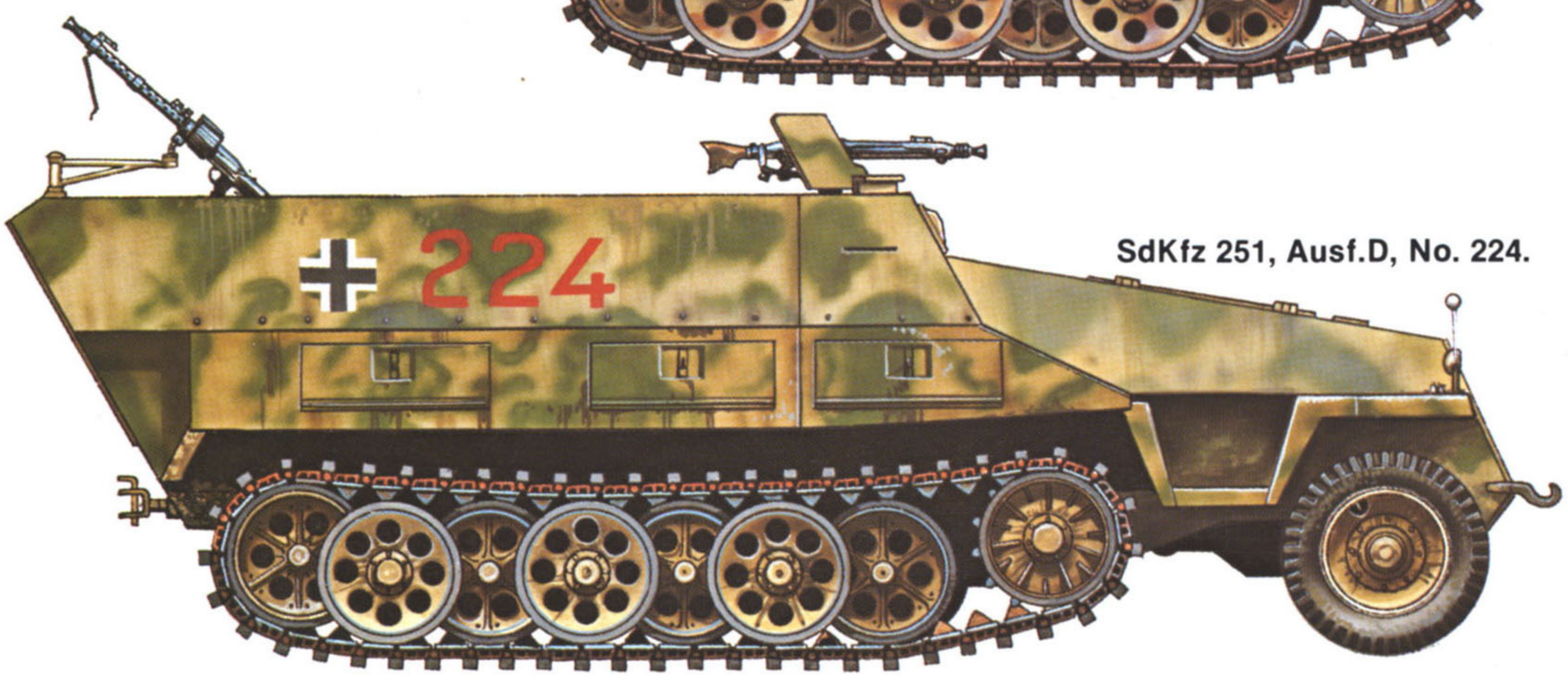
Ausf.D in Russia, 1944. Heavily camouflaged with branches.



SdKfz 251/3 II, Ausf.D, No. 001, used for liaison with tank formations.



SdKfz 251/7, Ausf.D with small assault bridges, used on trenches, large shell holes, etc.



SdKfz 251, Ausf.D, No. 224.

SdKfz 251/3

The SdKfz 251/3 I ***Mittlerer Funkpanzerwagen*** was a specialized radio command vehicle for controlling various formations. It carried two additional transmitters, the ***FuG8*** and the ***FuG4*** and was very conspicuous by its frame aerial. From 1942 on, this was replaced by an 8 meter mast, but even as late as 1944 the frame aerials were still to be seen. The crew was 7 men.

There were several subvariants, differing in their primary mission and equipment.

SdKfz 251/3 II	used for liaison with tank formations, it had the ***FuG8*** and the ***FuG5*** standard tank radio set.
SdKfz 251/3 III	used for ground-to-air coordination, it had the ***FuG7*** transmitter with a range of 50KM, and a ***FuG1*** receiver.
SdKfz 251/3 IV	a command vehicle, carrying the ***FuG11*** and a ***FuG12*** transmitters. It had the frame aerial and a 9M mast for the ***FuG11***.
SdKfz 251/3 V	similar to the 3 IV, but did not have the ***FuG12***.

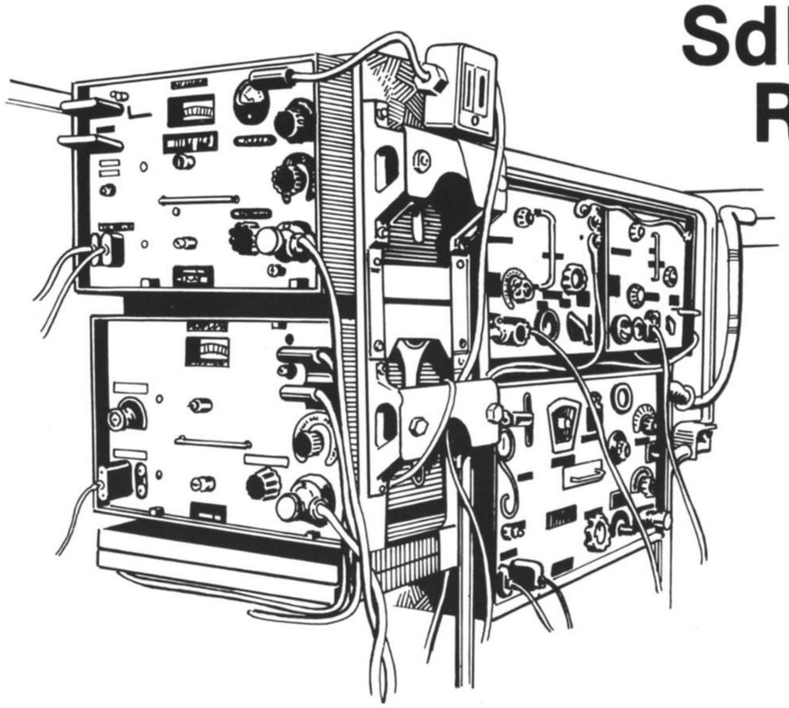
A pair of SdKfz 251/3 IV command halftracks seen during the Balkans campaign in 1941. This vehicle carried the FuG11 plus the FuG12 80 Watt transmitter and various receivers. (Bundesarchiv)

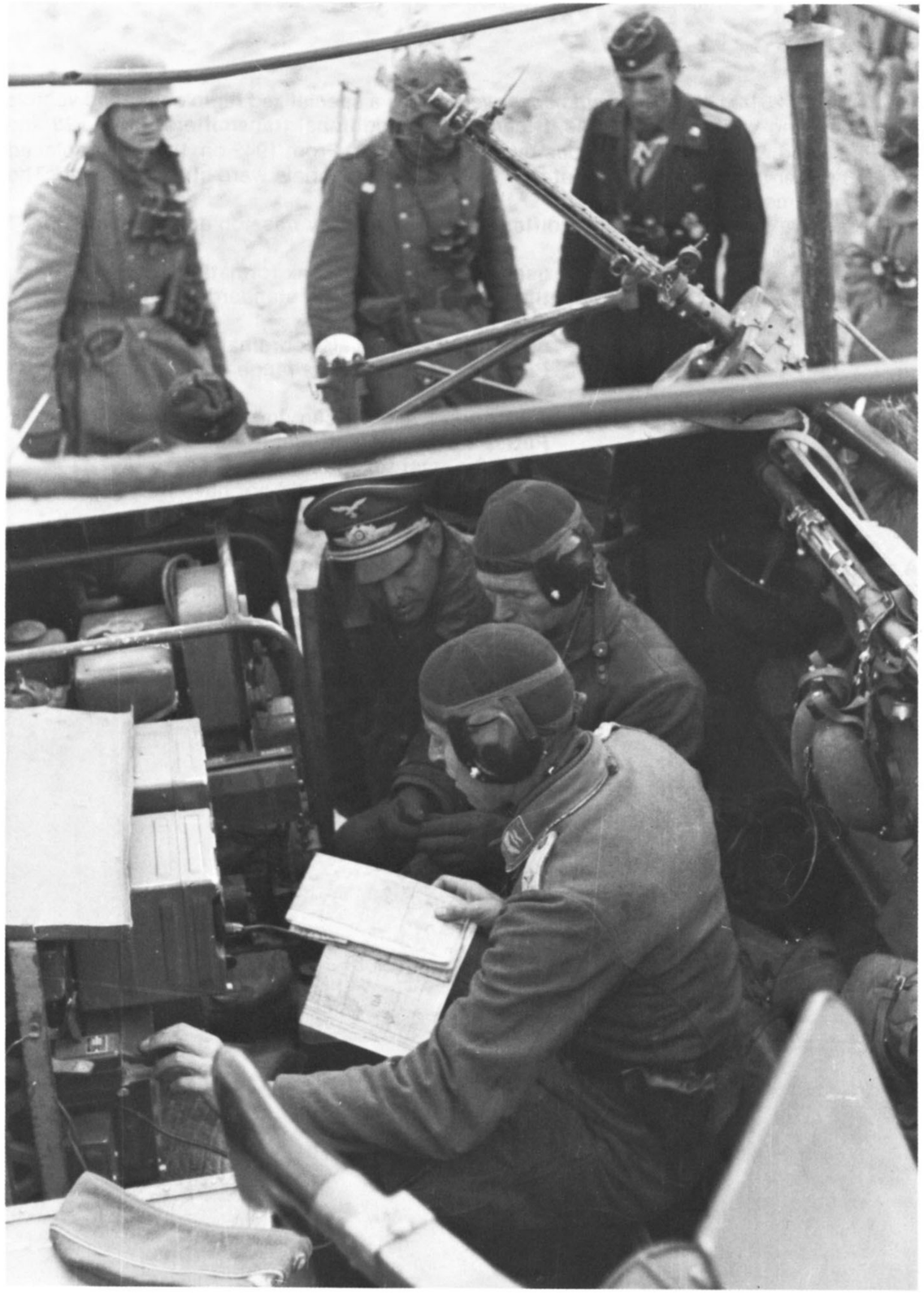
A SdKfz 251/3 I radio vehicle named *Fuchs* (Fox), in Russia. The frame aerial for the 30 Watt *FuG8* transmitter was very conspicuous. (Bundesarchiv)

This photo is a front view of *Fuchs*, assigned to the first company of motorized infantry of the 8th Panzer Division in Russia. The range of the transmitter was about 50KM. This vehicle has a good deal of extra external stowage — not uncommon on the /3, since the radios took up much room. (Bundesarchiv)

This is an early version of the ground-to-air liaison radio vehicle, the SdKfz 251/3 III. the frame aerial on this Ausf.A appears to be a field modification, as it is of an unusual design for the SdKfz 251/3. (Bundesarchiv)

SdKfz 251/3 Radio Set





A view of the inside of the same vehicle with Luftwaffe personnel manning the *FuG7 20* Watt transmitter. It is interesting that they are using the Luftwaffe MG 15 instead of the usual MG 34 for an air-defense weapon. (Bundesarchiv)

This inside look at a Luftwaffe SdKfz 251/3 shows how the whole right side of the crew compartment was occupied by transmitters and other radio equipment. These vehicles were very important in directing the local actions of Luftwaffe aircraft. (Bundesarchiv)

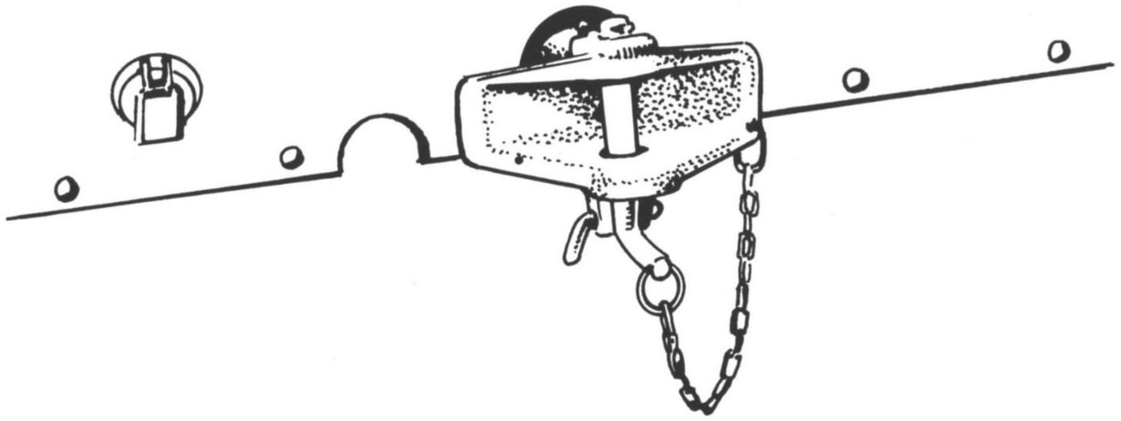
(Upper Left) This is a more modern version of the SdKfz 251/3 III, but it still has the frame aerial and two rod antennas. Again, a Luftwaffe crew provide ground air control. (Bundesarchiv)

A *Funkpanzerwagen* Ausf.C of the 11th Panzer Division, seen on the Crimean front. The 11th Panzer Division, known as the Ghost Division, had an emblem of a White skeleton carrying a sword riding on the front of a halftrack. Note the more elaborate frame antenna on this version. (Bundesarchiv)

SdKfz 251/4

The SdKfz 251/4 ***Mittlerer Schutzenpanzerwagen fur Munition und Zubehor des le.I.G.18*** was used in the early stages of the war to tow the light 7.5cm infantry howitzer and carry its crew and ammunition. 3.7cm PAK anti-tank guns were also used in this way. Later, the SdKfz 251 were used to tow heavier guns, like the 10.5cm infantry howitzer or the 7.5cm PAK 40. As artillery tractors they were gradually phased out, with their functions being taken over by self-propelled guns.

SdKfz 251/4 towing pintle



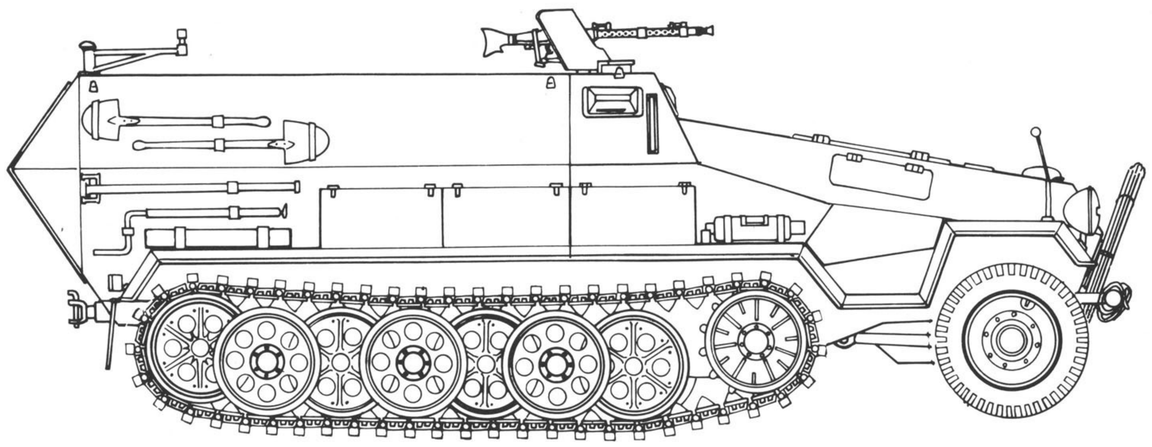
The SdKfz 251/4 was designed as a tractor and munitions carrier for the 7.5cm le.I.G.18 light infantry howitzer. This Ausf.A is being transported across a river without its gun.

The SdKfz 251/4 was sometimes used to tow even heavier guns, as this vehicle of the 6th Panzer Division is doing in France during the 1940 campaign. The gun here is the le.I.G. 18 10.5cm light infantry howitzer. (Bundesarchiv)

SdKfz 251/5

The SdKfz 251/5 ***Mittlerer Schutzenpanzerwagen fur Pionier Zug*** was designed to carry combat engineers and their equipment. It carried only eight men and the room thus made available was used for special equipment. This version was later supplanted by the SdKfz 251/7.

SdKfz 251/5 side view



The engineer vehicles came in two models. The SdKfz 251/5 was the original version, introduced in 1939. It carried three less troops and the space vacated was used for carrying the various equipment used by the engineers. These Ausf.Bs of the 9th Panzer Division carry cables, jacks and spare track links on the front plates and extra equipment under the tarpaulins in the back.

SdKfz 251/6

SdKfz 251/6 ***Mittlerer Kommandopanzerwagen*** vehicles were issued to high commanders and carried the ***FuG11*** radio transmitter plus a complete set of decoding and cryptographic machines. Ausf.A vehicles were usually used for these variants, which were fitted with a variety of frame aerials.

The SdKfz 251/6 was a staff vehicle which carried, besides the FuG11 100 Watt transmitter encoders, cypher machines and other office equipment. It was issued to high commanders, usually from the commander of the division up. This picture shows the radio sets in the interior of a SdKfz 251/6 Ausf.A.

A SdKfz 251/6 of the 112th Infantry division during the Balkans campaign in 1941. (Bundesarchiv)

One of the most famous German tank commanders was General Heinz Guderian, shown here in his Kommandopanzerwagen in France, 1940. (Bundesarchiv)

The divisional headquarter's pennant on this SdKfz 251/6 seems to indicate that Field-Marshal Von Bock is riding only as a guest since he was the commanding officer of the Armee Gruppe Mitte (Army Group Center) at the time this picture was taken, Summer 1941. (Bundesarchiv)

The SdKfz 251/6 staff halftrack of Lieutnant General Kirschner, the CO of the 1st Panzer Division, seen here in Estonia in 1941. (Bundesarchiv)

This Ausf.D command car in Russia in 1944 carries a frame antenna taken from a SdKfz 232 armored car. The camouflage is mud smeared over white-wash. (Bundesarchiv)

SdKfz 251/7

The SdKfz 251/7 ***Mittlerer Pionierpanzerwagen*** was the later version of the engineer's vehicle and can be easily recognized by the supporting brackets on the sides of the superstructure. These usually carried small assault bridges, which were used to bridge trenches, large shell holes, etc. Additional engineering equipment was carried inside the vehicle, which had a crew of eight.

(Above) The second engineer's modification was the SdKfz 251/7. It is easily recognizable by the racks welded to the side plates used to carry small assault bridges, which were used for crossing large shell holes, trenches etc., and to assist bogged down vehicles. These vehicles belong to the 7th Panzer Division and are seen in France in 1942. (Bundesarchiv)

(Upper Left) A SdKfz 251/7, Ausf.C on maneuvers in Holland towing the schwere panzerbuchse 2.8cm sPzB 41, the tapered-bore anti-tank gun. The assault bridges were the main external feature distinguishing the /7 from the /5. (Bundesarchiv)

(Lower Left) The assault bridges were not always carried, and the space between the racks was used to store additional equipment. This is a 3rd Panzer Division vehicle in Russia, 1943. (Bundesarchiv)

(Below) A company of SdKfz 251/7, Ausf.D's complete with the assault bridges and painted in an interesting camouflage pattern of Red Brown and Green over Sand.

SdKfz 251/8

The SdKfz 251/8 ***Mittlerer Krankenpanzerwagen*** was an armored ambulance. All Ausfuhrungs (A-D) were used for this task — removing wounded from forward areas and from places where wheeled ambulances could not go. With armament removed and modified interiors, they could carry two stretcher cases and four lightly wounded, or eight lightly wounded. The crew was usually three men.

Detail of the rear doors of a SdKfz 251/8 Ausf.C shows the complicated hinges which assured that the doors swung clear of the hull in the open position, and a fire-extinguisher mounted on the door. Southern Russia, 1943. The standing soldier wears the padded winter camouflaged two-piece suit and heavy winter boots. Ambulances often carried tarpaulins to protect the wounded. (Bundesarchiv)

A SdKfz 251/8 Ausf.D, used for evacuation of wounded of a tank unit in the South of Russia in 1943. This vehicle has been coated with Zimmerit anti-magnetic paste, which is very unusual for an APC. (Bundesarchiv)

A captured SdKfz 251/8 Ausf.D being used by the US Army. On this vehicle the top part of the door frame has been removed to facilitate the loading of stretchers.

This SdKfz 251/8 Ausf.C, assigned to the s.PzAbt 501 "Tiger" in Tunisia, shows the normal large red cross markings applied to ambulances. The jerrycans on the rear doors carry water. These installations were common in Africa. (Bundesarchiv)

(Lower Right) The SdKfz 251/8 was modified to carry two stretcher cases and four seated wounded, or alternatively eight seated wounded. Externally it differed from the normal SdKfz 251/1 by the lack of armament and addition of red crosses, as this Ausf.C in Russia demonstrates. The radio antenna is for the standard FuSpG "F" fitted in almost all SdKfz 251's.

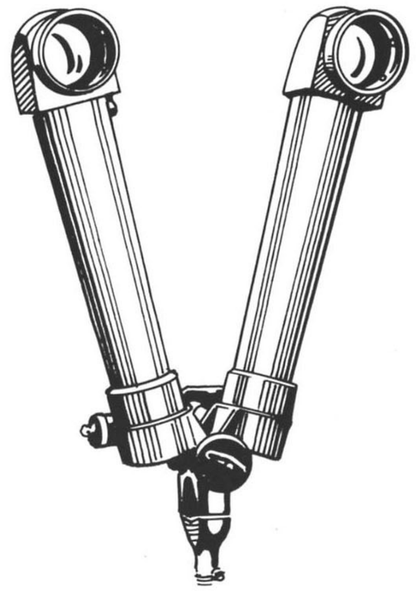
This ambulance of the "Hermann Goring" Panzer Division was photographed near Cassino in 1944. Ambulances were sometimes converted from standard 251's by removing the MG mounts and adding appropriate markings. (Bundesarchiv)

SdKfz 251/9

The SdKfz 251/9 ***Mittlerer Schutzenpanzerwagen fur 7.5cm KwK 37 L/24*** was developed because Panzergrenadier units were in great need of close-support heavy firepower, which could not be met by fully tracked assault gun units. Therefore, the short 7.5cm tank guns left over after the conversion of PzKpfw IV tanks to the long-barreled 7.5cm KwK 40 guns were mounted in the SdKfz 251. The front plate above the commander's seat was cut out for the gun. On later models, a new overhead mount was mounted on the driver's roof, and the sides of the crew compartment were raised to provide increased protection for the crew. 52 rounds for the gun were carried, with a crew of three.

The SdKfz 251/9 was developed as a supporting self-propelled gun. Mounting the short 7.5cm KwK 37 L/24, which were freed when the PzKpfw IV tanks were fitted with the long-barrelled 7.5cm guns, these vehicles were issued to the heavy gun companies of Panzergrenadiere Regiments. This SdKfz 251/9 Ausf.C in Russia shows the mounting of the gun in the cut-out in the driver's compartment.

A SdKfz 251/9 Ausf.C in Russia, seen in the middle of 1943 in an elaborate camouflage pattern of dark Yellow over the old dark Gray. The gun telescope is clearly visible in front of the three soldiers. (Bundesarchiv)



Binocular spotting scope

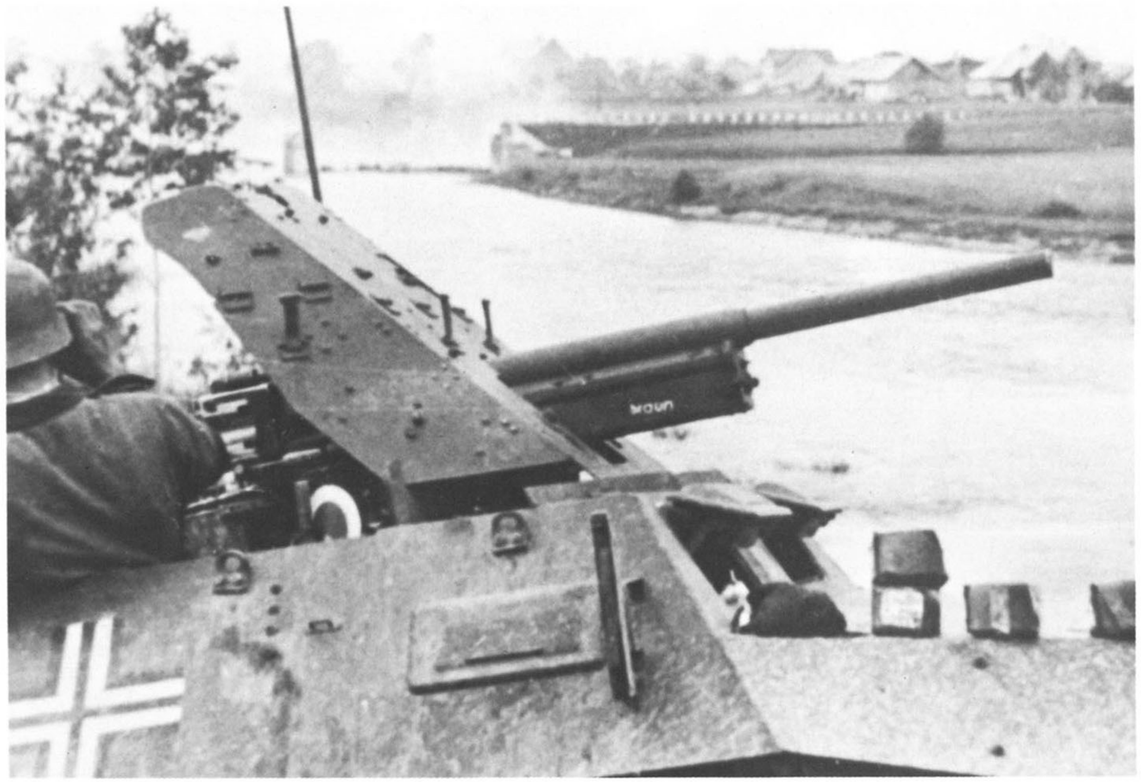
Cleaning the gun of the 251/9. The vehicle carried 52 rounds of ammunition for the gun and was heavier than the standard SdKfz 251 - 8.8 tons. This Ausf.C is in the original Panzer Gray color with mop-applied Yellow camouflage.

The later mounting for the 7.5cm gun on a SdKfz 251/9 Ausf.D, the same mounting was used on the SdKfz 234/3 and the SdKfz 250/8. This mount required few alterations to existing vehicles, and could even be installed by division ordnance units. (Bundesarchiv)

This front view of the SdKfz 251/9 Ausf.D with the old mounting shows how the gun did not appreciably heighten the silhouette of the vehicle.

SdKfz 251/10

The SdKfz 251/10 ***Mittlerer Schutzenpanzerwagen fur 3.7cm PAK*** was the first version to mount a support weapon. In early 1940 Panzer Division infantry platoon commanders were issued with SdKfz 251s equipped with the 3.7cm PAK on the front of the superstructure. These vehicles provided close support and anti-tank capability. The crew was six men, and 168 rounds for the gun were carried. The early variants used the original gun shield, which was modified on later production vehicles to lower the silhouette.



A close-up of the gun on an early SdKfz 251/10 Ausf.A. These vehicles were issued to platoon commanders and provided close-support for the other vehicles in the platoon and anti-tank capability.

(Above Right) The SdKfz 251/10 was actually developed before the SdKfz 251/9, as a carrier for the 3.7cm PAK gun. Introduced in 1940 in time for the French campaign, it originally mounted the gun with its original shield on the top of the superstructure as on this Ausf.A.

Two Ausf.As of the 2nd Panzer Division in Russia, 1941. The first is a SdKfz 251/10, a platoon leader's vehicle armed with a 3.7cm gun. This /10 carries a modified full-width shield to protect the gun crew. (Bundesarchiv)

A further development was limiting the shield to the left side only, where it protected the gunner who had to be exposed when laying the gun. This close-up of the gun shows the later half-shield. The barrel was L/50 long and with a 875 M/SEC muzzle velocity the gun had an effective range of 600M. It was almost totally useless against contemporary tanks, but it could still provide effective fire against lightly armored or soft-skinned vehicles and bunkers.

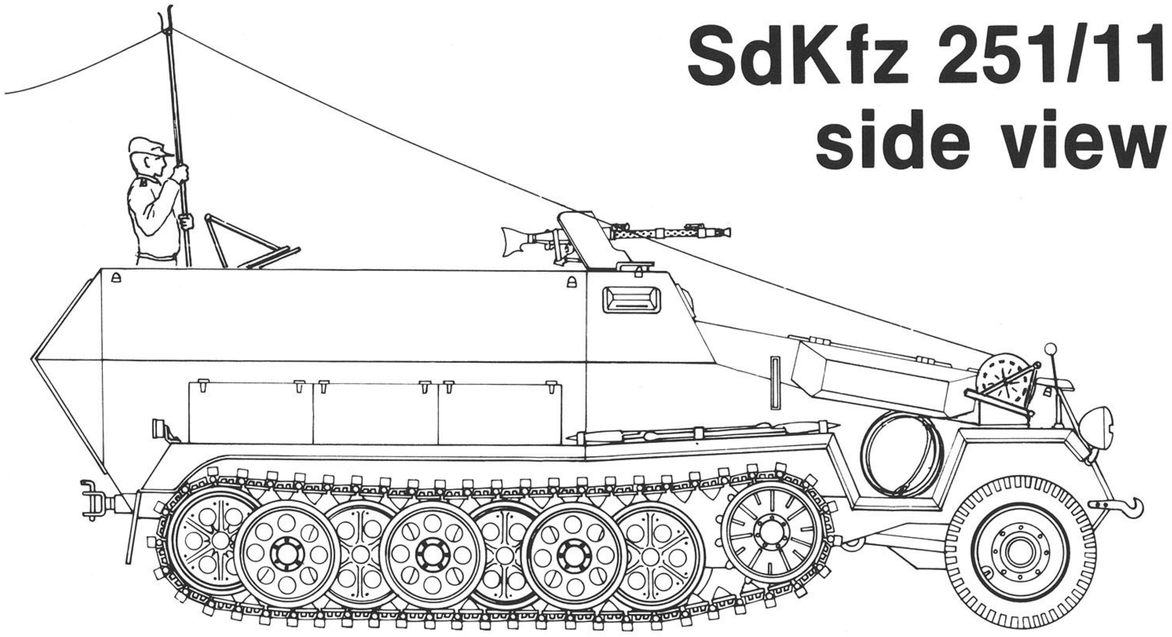
(Below Right) Five of the six man crew was visible, the sixth being the driver. The gunner's telescope is visible in the shield's aperture.

The gun commander used the scissors telescope for acquiring targets. This 10 power binocular was also used for measuring azimuths and angles of sight.

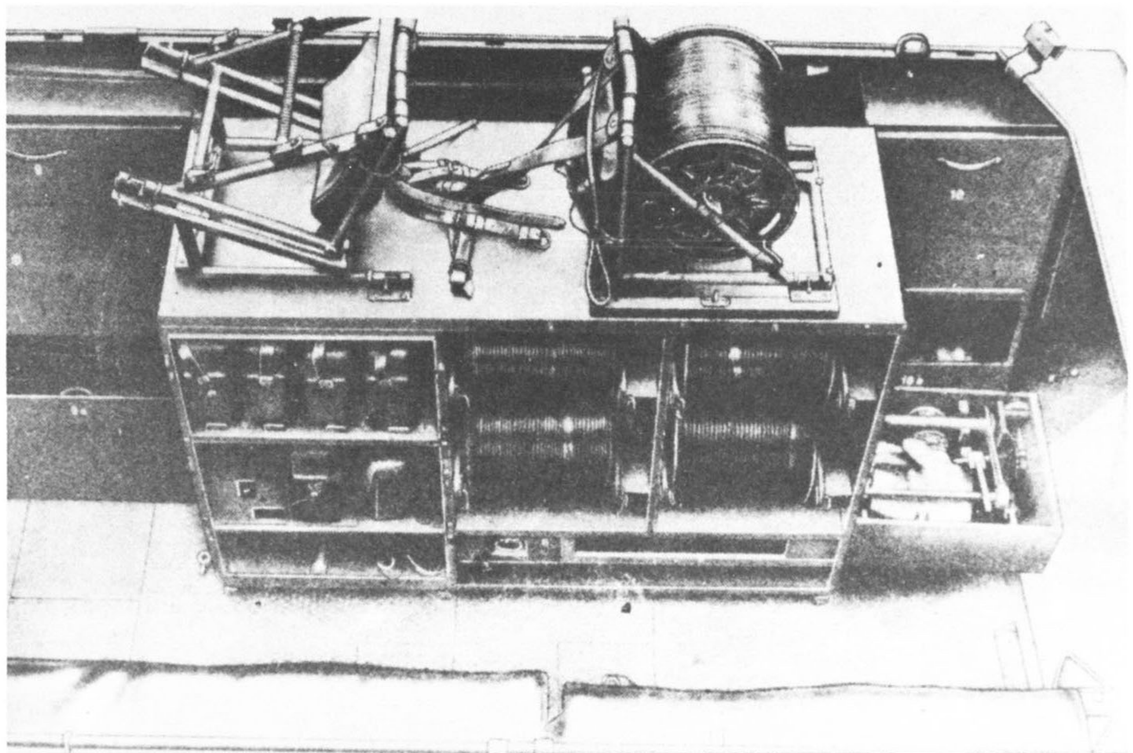
SdKfz 251/11

The SdKfz 251/11 ***Mittlerer Fernsprechpanzerwagen*** was a specialized vehicle for laying telephone cables. It carried five men and a supply of cable and telephones.

SdKfz 251/11 side view



SdKfz 251/11 was a specialized vehicle for laying telephone cables, it was equipped with reels of telephone cables and a special mast which allowed the crew to string wire on trees and poles from the moving vehicle. In the side view above, the reel with cable is mounted on the front right fender. While the photo shows the reel racks and field telephones stored inside the vehicle. The rest of the vehicle was similar to the 251/1 APC.



Artillery Survey Vehicles

The SdKfz 251/12 ***Mittlerer Messtrupp und Geratpanzerwagen*** was an artillery survey section vehicle with a crew of six men. It was similar in appearance to the command vehicles and had a frame antenna for the Fu8 radio.

The SdKfz 251/13 ***Mittlerer Schallaufnahmepanzerwagen*** was another artillery variant, used to carry sound-recording equipment.

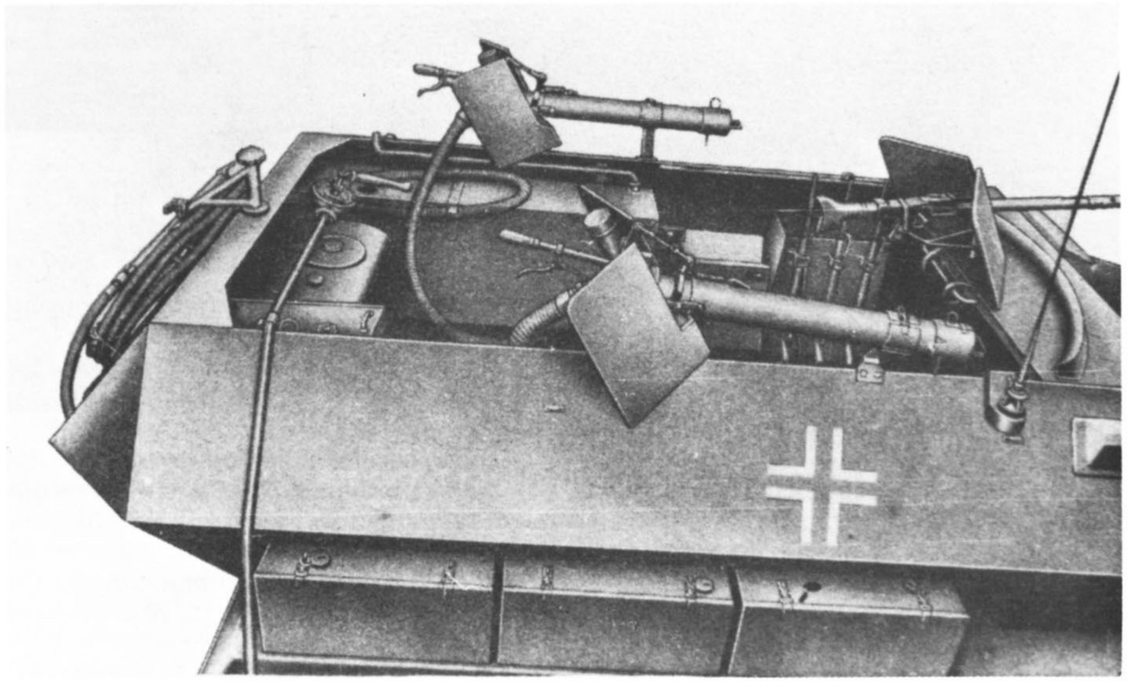
The SdKfz 251/14 ***Mittlerer Schallauswertepanzerwagen*** was a companion vehicle to the 251/13. It carried sound-ranging equipment for identifying enemy artillery batteries.

The SdKfz 251/15 ***Mittlerer Lichtauswertepanzerwagen*** was an artillery flash-spotting vehicle. Most of the specialized artillery surveying and detection SPWs were not built in large numbers, as they were needed more urgently by Panzergrenadier units.

The SdKfz 251/12 was an artillery survey vehicle, one of several very specialized artillery support vehicles. They were eventually discontinued, partly because the SPW vehicles were badly needed by front line units.

SdKfz 251/16

The SdKfz 251/16 ***Mittlerer Flammpanzerwagen*** was a flame-throwing variant, armed with two 1.4cm projectors, situated on the sides of the fighting compartment behind armored shields. Fuel was carried in two tanks at the rear of the fighting compartment, whose rear doors were permanently sealed. 700 liters of fuel was sufficient for up to 80 short bursts. The earlier versions carried an additional hand-held flame thrower which could be used to up to 10m from the vehicle. This was discontinued. The front MG was retained and the crew was five.



The mittlerer Flammpanzerwagen SdKfz 251/16 was a very effective weapon. This inside photograph shows the two 700 l tanks in the rear part of the vehicle, whose rear doors were permanently sealed. On earlier models, like this Ausf.C, a third, portable flame-thrower was carried. It was connected to a 10m hose, which can be seen coiled on the back plate.

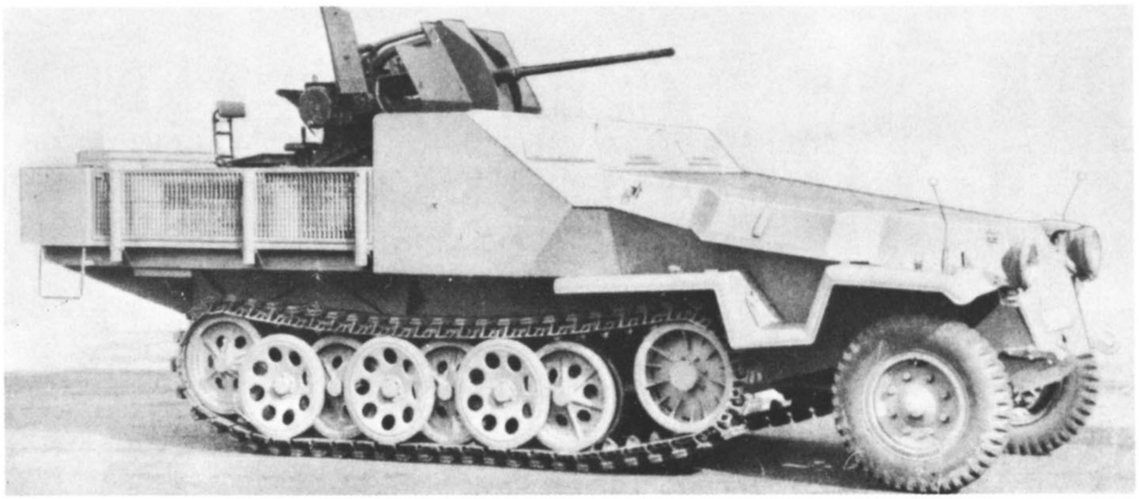
(Above Right) The fuel carried was enough for about 80 short bursts. The crew was five men, who were issued flame-proof overalls. The forward MG and personal weapons were carried as well.

A detailed view of one of the flame-throwers, showing the mount, shield and cradle for the tube. (Bundesarchiv)

SdKfz 251/17

The SdKfz 251/17 ***Mittlerer Schutzenpanzerwagen mit 2cm FLAK 38*** was a specialized anti-aircraft vehicle. After several prototypes of the SdKfz 251 armed with the 2cm FLAK gun were evaluated, primarily in trials with Luftwaffe troops, the final version was accepted for production in 1944. The gun was mounted in a small armored turret and had a free 360° traverse. 600 rounds of ammunition were carried and a six man crew.

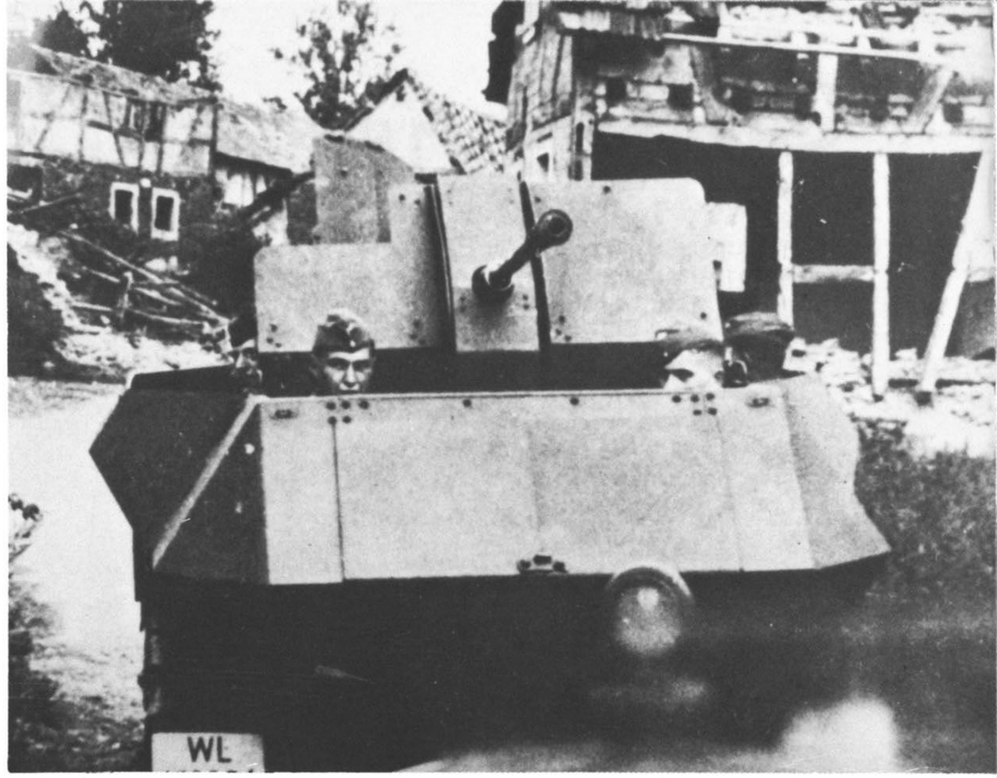
(Below) This prototype of the 2cm Flak 38 carrier, based on the SdKfz 251, was never introduced into service since it did not offer any advantages over the halftrack tractor mount SdKfz 10/5, and was costlier to build both in materials and labor.



(Above) The Luftwaffe service test vehicle shows the extended shape of the folding side. One of these vehicles - folding sides and all - was built as a command vehicle, with no gun and the addition of the usual radios and frame antenna!

(Lower Left) Through the open rear doors can be seen the raised platform mount for the 2cm Flak 38. The gun itself was used in its standard ground mount version, with the base plate mounted on the vehicle's raised platform.

(Below) The Luftwaffe developed this conversion of the Ausf.C as a Flak 38 carrier. The gun was enclosed in a fully armored superstructure with sides that could be lowered.



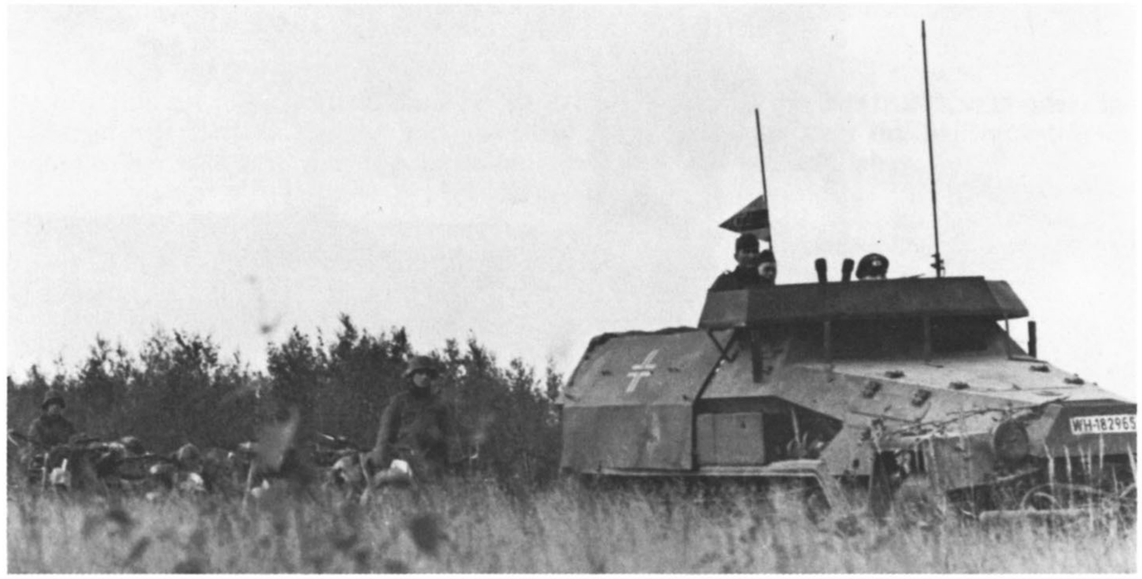
The Luftwaffe 251 Flak carrier with the sides folded down to allow crew movement and a wide field of fire for the gun. This was a too complicated conversion and only a few of these vehicles were actually issued to troops. Note the empty rifle racks on the engine side plates.

(Above Right) A rear view of the Luftwaffe (WL) vehicle on the road. The crew's rifles were carried on special racks on the engine side plates, and additional ammunition for the gun was carried in the driver's compartment.

Mittlerer Schutzenpanzerwagen mit 2cm Flak 38 was the 17th modification on the SdKfz 251 chassis. The gun was mounted in a small armored turret and appeared only on the Ausf. D chassis, as this modification appeared only in 1944. The gun was considerably modified for this use. Though only a few of the SdKfz 251/17 were issued to troops, they were encountered both on the Eastern and the Western fronts. This knocked-out vehicle shows that the rear part of the fighting compartment was still open from above. Luxembourg, December 1944.

SdKfz 251/18

The SdKfz 251/18 ***Mittlerer Beobachtungspanzerwagen*** was an observation vehicle with the FuG12 transmitter and a map table extension over the cab roof. It was used by the headquarters of higher level units and had a crew of six men.



Added skirt armor is visible on this SdKfz 251/18. Note the rod antenna for the FuG12 transmitter, the motorized infantry battalion headquarters pennant and the scissors telescope. (Bundesarchiv)

The SdKfz 251/18 was officially named mittlerer Beobachtungspanzerwagen, or observation armored vehicle. It was usually issued to senior commanders and staff officers and is recognizable by the modified upper superstructure. It carried the FuG12 transmitter with a rod antenna. This vehicle, seen in France in 1940, belongs to the 1st Panzer Division.

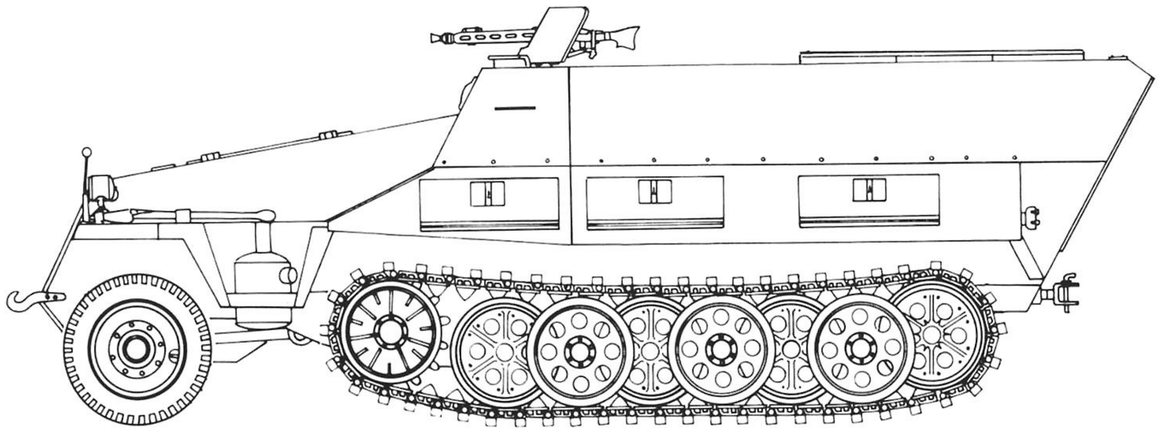
Rommel talking to the staff of a Panzer Division. The vehicle is an Ausf.A, many of which were converted to special purpose versions.

Details of the map table extension of the SdKfz 251/18. The vehicle is fitted with an additional skirt armor on the rear part of the superstructure. Russia, 1941. (Bundesarchiv)

Command and radio vehicles were often converted in the field when issued command vehicles were not available. This command half-track is a converted SdKfz 251/7 engineer's vehicle, with radios field-fitted in the rear right interior. The interior fittings were mostly bolted in place, and could be removed easily. Only the right rear seat and equipment stowage bins would have been removed - the standard radio set would fit into the same space. (Bundesarchiv)

SdKfz 251/19

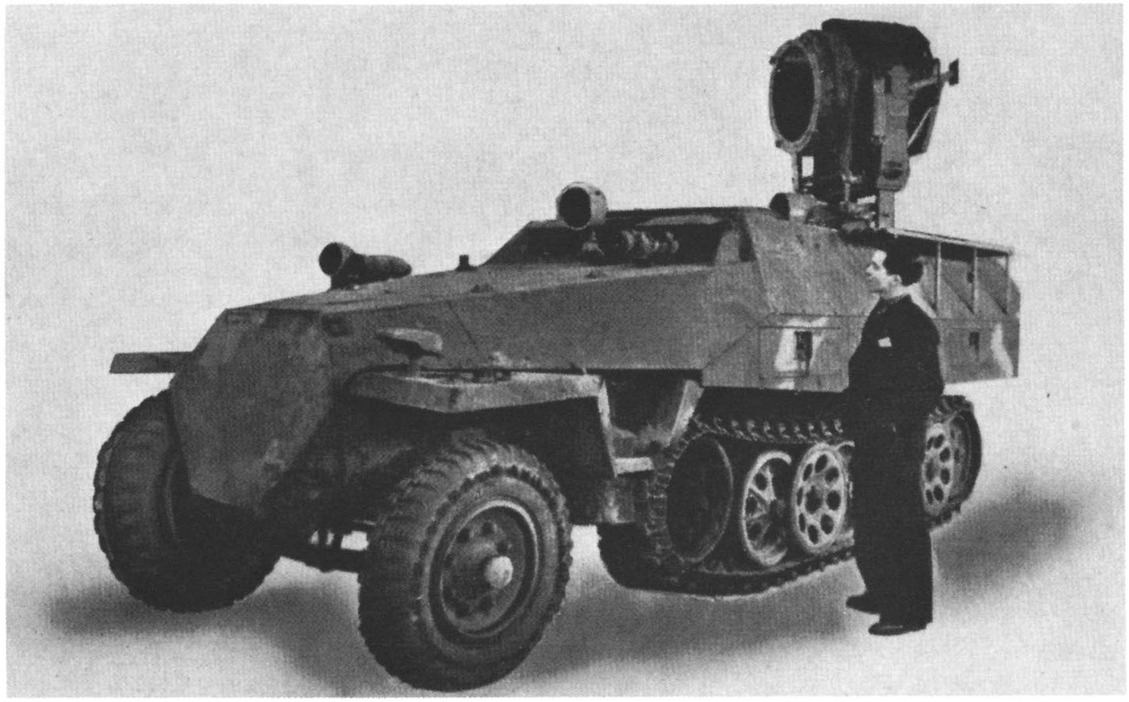
The SdKfz 251/19 ***Mittlerer Fernsprechbetriebspanzerwagen*** was a mobile telephone exchange for forward areas, this vehicle provided telephone communications networks in areas where more permanent arrangements could not be made.

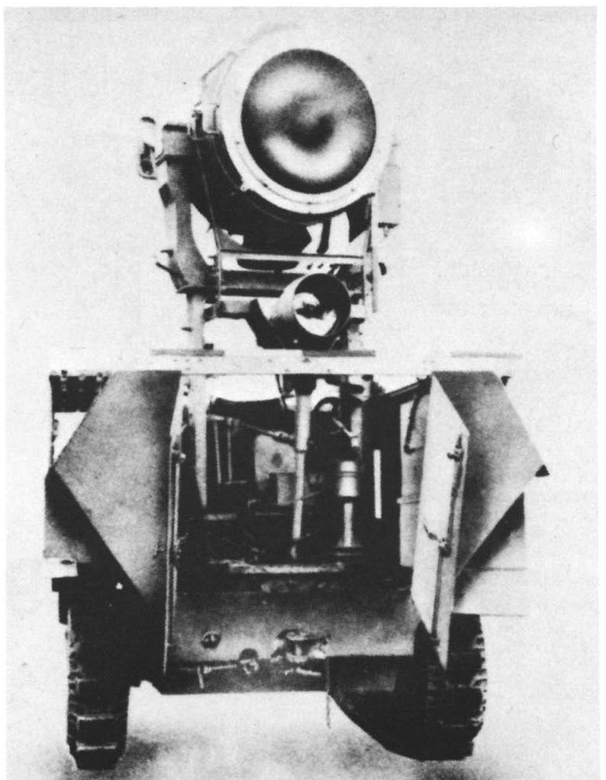


SdKfz 251/19

SdKfz 251/20

The SdKfz 251/20 ***Mittlerer Schutzenpanzerwagen - Infrarotscheinwerfer*** was developed when the Germans introduced specialized tank units equipped with infra-red passive telescopes in late 1944. To provide them with targets, the 60CM infra-red searchlight was developed and mounted on the SdKfz 251. Called "UHU" (owl), these vehicles could illuminate and identify targets up to 1000M away and lead the tanks to them for the kill. The crew was four men.





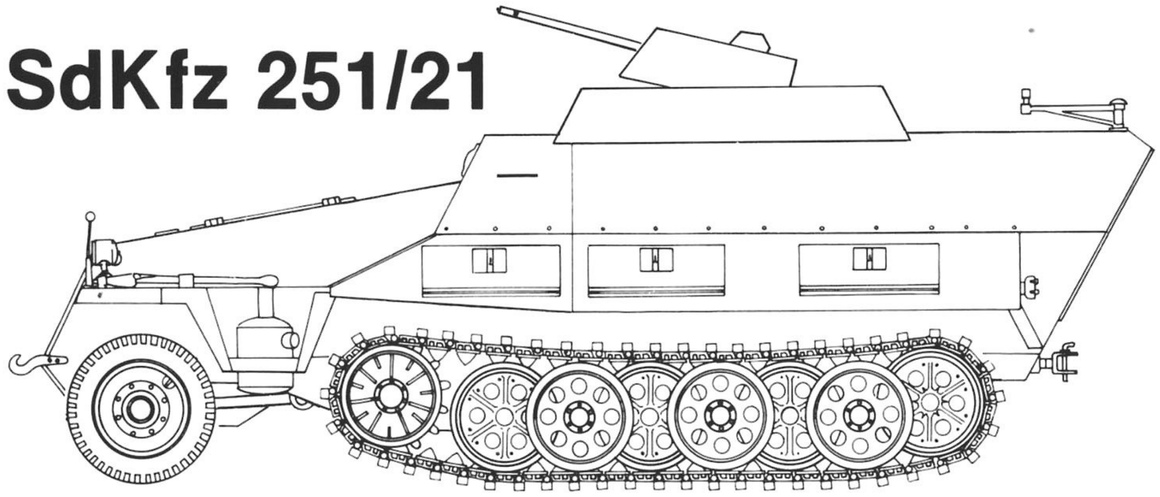
(Above Left) The SdKfz 251/20 *UHU* (owl) carried a 60CM infra-red searchlight, which was introduced in 1944 as a means of target acquistition for specialized tank units equipped with infra-red sights. It was mounted on the Ausf.D only. A small infra-red light and a sight in the driver's visor were used for night driving. The small walkways at the side of the superstructure allowed for the searchlight's maintenance. The UHU carried a crew of four and was fitted with the FuG5 tank transmitter. Its main purpose was to illuminate targets for the accompanying Panthers, who had only passive sights.

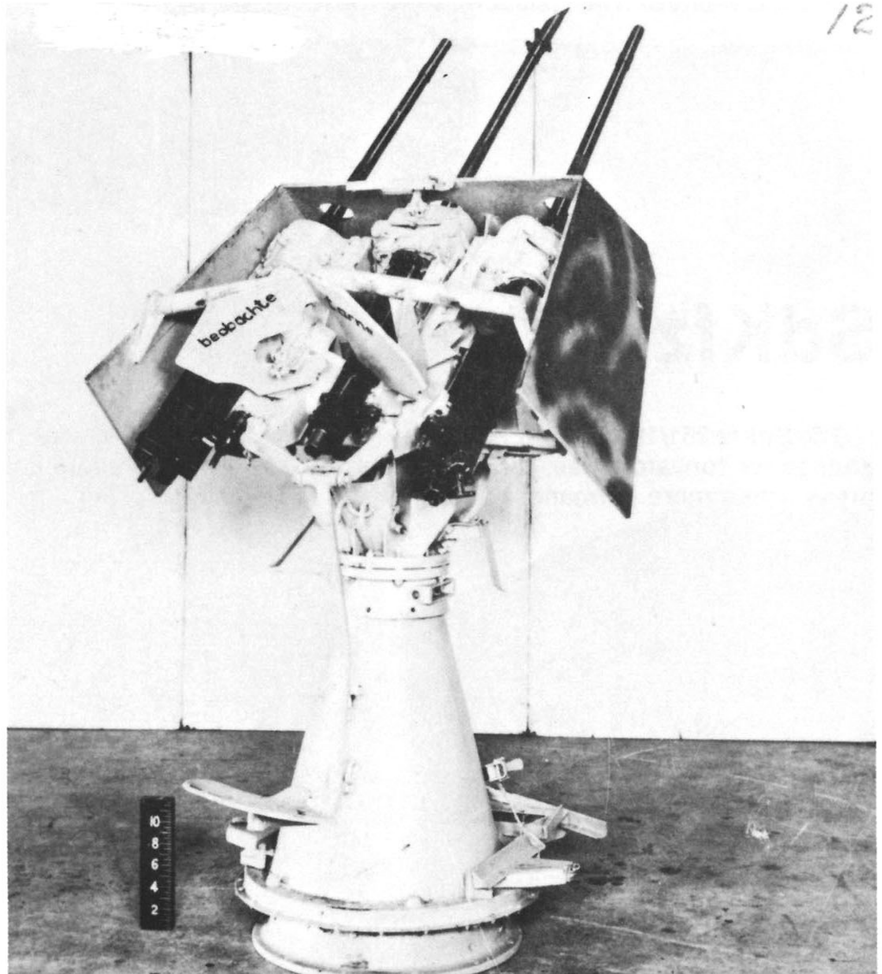
(Left) Inside of the SdKfz 251/20 shows the complicated power traverse for the massive searchlight. Coupled with the searchlight was the Beobachtungsgerat 1221 telescope. Both the searchlight and the telescope had a range of over 1000M.

(Right) The triple MG151 mount taken from a SdKfz 251/21, showing the feeding mechanisms of the guns, the breeches, and the small armored shield in the middle for the gunner. The sight has been removed from this mount.

SdKfz 251/21

The SdKfz 251/21 ***Mittlerer Schutzenpanzerwagen - Drilling MG 151*** was another anti-aircraft version. When the Luftwaffe started to convert to 30MM aircraft cannons, a supply of the excellent 1.5CM MG 151/15 and 2CM 151/20 became available. To provide an effective anti-aircraft vehicle, three of the guns were mounted on a compact pedestal behind a small armored shield and fitted into the crew compartment of a SdKfz 251. With their rate of 700 rounds per minute per gun, they could provide very effective defensive fire. The crew was six men, and 3,000RDS of ammunition were carried in the vehicle.

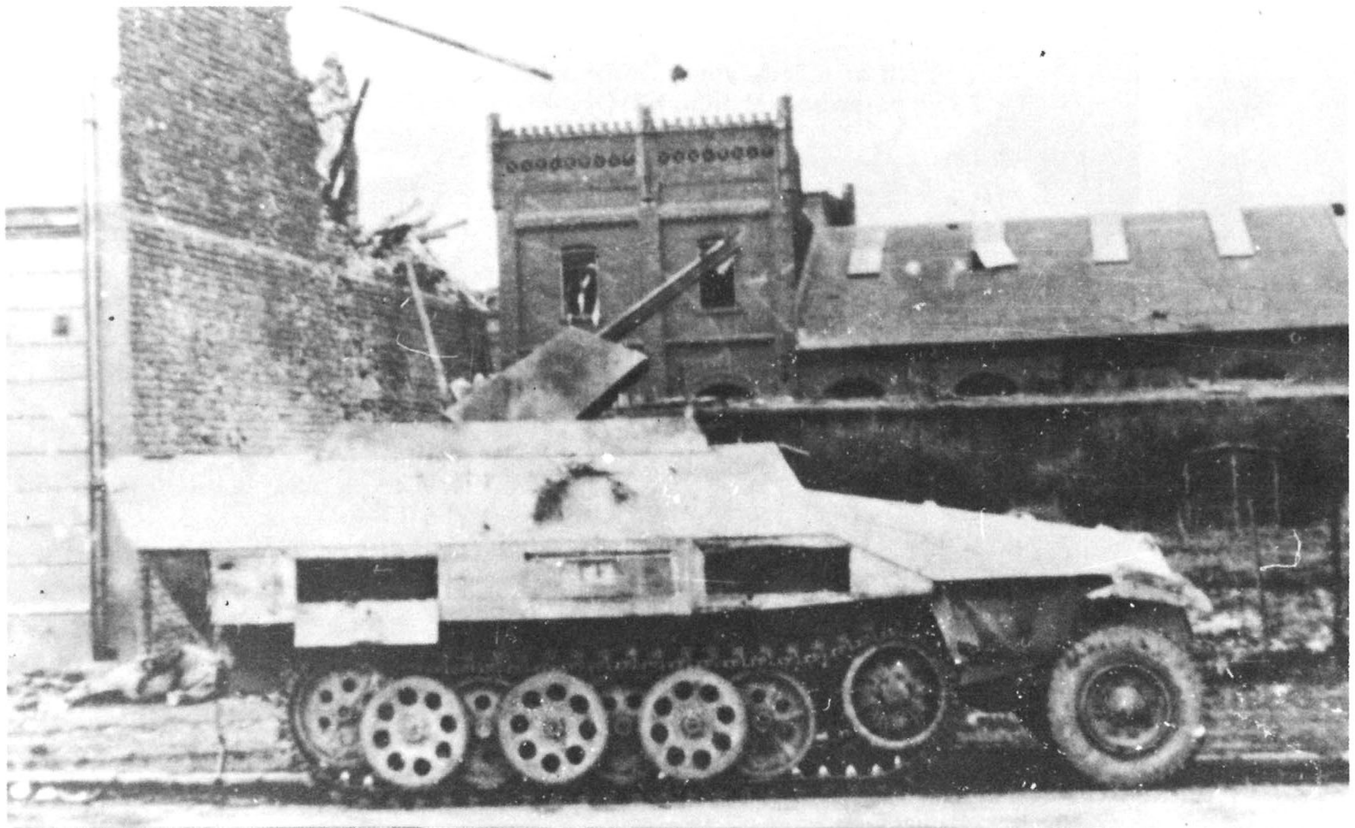


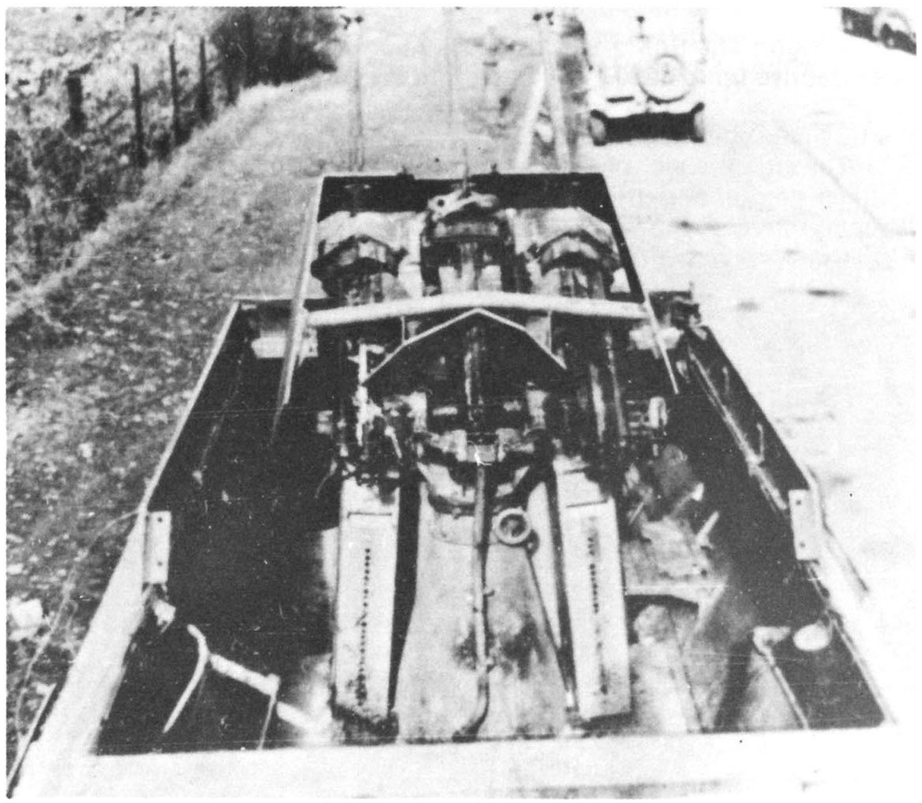


A field-modified SdKfz 251/21 based on the Ausf.C, the guns being fitted without the armor shield.

The very effective production anti-aircraft version was issued under the designation SdKfz 251/21. It carried a triple mount MG 151/15, very effective 15MM aircraft cannons. Some later vehicles carried the triple MG 151/20. The superstructure around the gun mount was raised. Ironically, this vehicle was destroyed by Allied aircraft.

(Below) A side view of the SdKfz 251/21 with the guns at high elevation. 3000 rounds were carried. (Right) Inside the SdKfz 251/21 with the guns trained forward. Each gun was belt-fed from a separate box. The rate of fire of each gun was 700 rounds per minute.

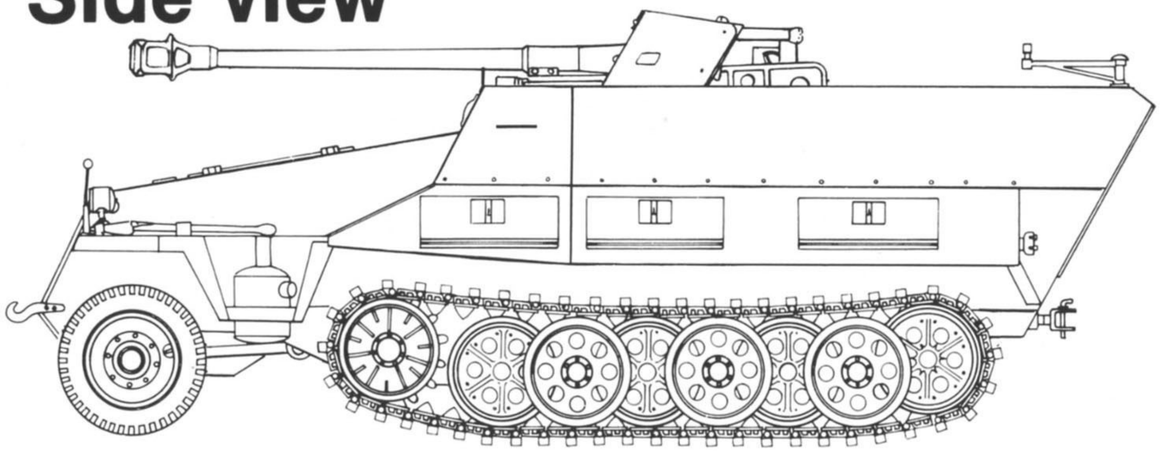




SdKfz 251/22

The SdKfz 251/22 ***7.5cm PAK 40, L/46 auf mittlerem Schutzenpanzerwagen*** was introduced in December of 1944. This modification was planned to provide increased mobility to anti-tank guns before the fully-tracked Einheitswaffentrager could be introduced into production. The whole gun including a shield was fitted in the crew compartment. 22 rounds for the gun and a crew of four were carried.

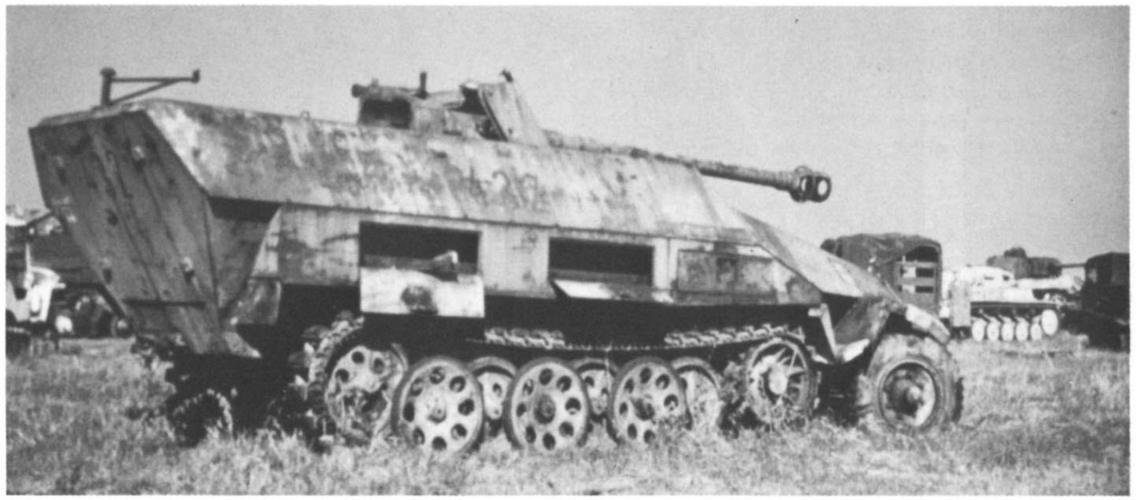
SdKfz 251/22 Side view



An abandoned SdKfz 251/22. Note the gun travel lock on the driver's compartment.

(Below Right) The SdKfz 251/22 in the Aberdeen Ordnance Museum collection. The gun was effective up to 3200m and could fire armor-piercing, hollow charge, and HE shells.

The last important modification to the 251 chassis was the SdKfz 251/22, introduced in 1944. Towards the end of the war the shortage of tanks forced the infantry Regiments to shoulder greater and greater burdens. In order to make as many anti-tank guns as possible self-propelled, the PAK 40 7.5cm anti-tank gun was mounted on the SdKfz 251. Though effective, the gun overloaded the chassis considerably.



SdKfz 251/23

The SdKfz 251/23 ***Mittlerer Schutzenpanzerwagen mit 2 cm KwK*** was the last variant and appeared at the end of December 1944. An Ausf.D was fitted with the 2cm cannon in the Hangelafette 38, the small open-top turret as used on the SdKfz 234/1 or Aufklarungspanzer 38(t). The vehicle carried a FuG12 radio and four men.

Post-War Development

When the war ended, the newly formed Czechoslovak Army had three sources of armored fighting vehicles in its inventory. The First Czechoslovak Army, which fought under the tutelage of the Red Army on the Eastern front, was equipped with T-34/85 tanks. The Independent Czechoslovak Armored Brigade, which fought with the Allies on the Western Front, brought home Cromwells and Stuarts V's. Finally, the retreating Wehrmacht abandoned on Czechoslovak soil a number of German vehicles, many of which were being manufactured under license by Czech armament factories.

Three types of the German armored fighting vehicles were the most numerous and were used not only for training, but as first line fighting vehicles. They were the PzKpfw IV, Jagdpanzer HETZER and the SdKfz 251. In the early fifties, a lack of spare parts and the need to unify the Army's equipment with the Soviet Army led to the phasing out of English and German equipment (a number of armored vehicles were sold to Israel and some PzKpfw IVs went to Syria). Nevertheless, it was decided to keep the SdKfz 251 as a standard armored personnel carrier, mainly because the Soviet Army at that time did not have a suitable APC itself.

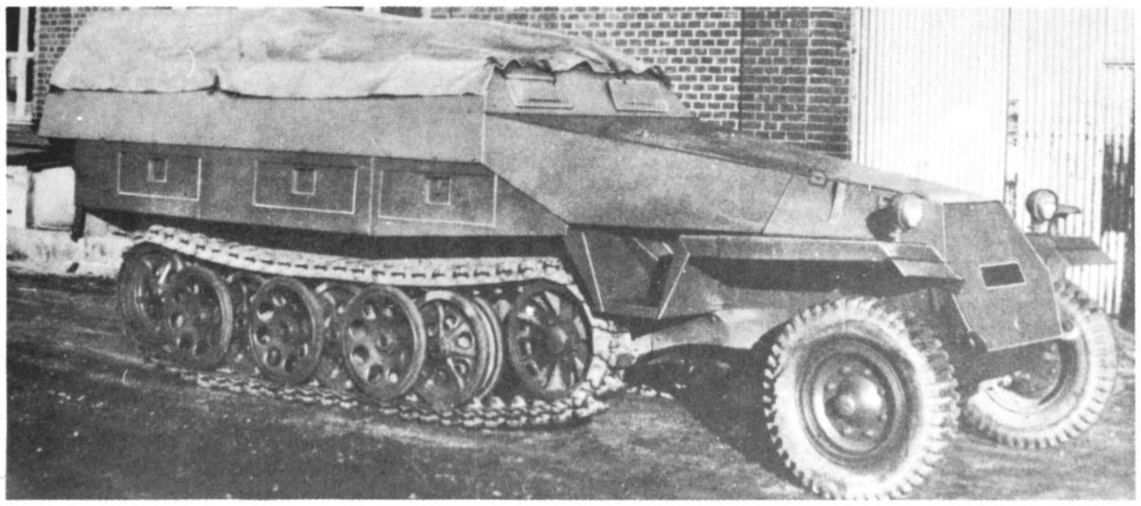
The SdKfz 251 was modified and redesignated OT-810 (Obrneny Transporter). The basic chassis with the differential and gearbox was retained unchanged from the Ausf.D. A new TATRA V-8 diesel engine with 9,848cc displacement was installed, its output was 130hp at 2,000rpm. The body was widened at the sides and was totally enclosed with an armored roof. The commander had a circular hatch, hinged at the rear, and the crew's compartment was covered with two oblong hatches, which when opened lay on the sides of the vehicle. Driver's and commander's side visors were reintroduced and the crew members were provided with firing ports in the sides, so they could fire their weapons from the vehicle without exposing themselves. The vehicle had an angled rear, similar to the Ausf.C. The whole crew compartment was sealed against chemical warfare and radiation fallout.

Small external changes were the horizontal cylindrical exhaust mufflers on both sides of the engine, the tools moved from the side plates to the side of the engine compartment, standard headlights with protective screens positioned on the fenders, and a mounting ring on the commander's hatch for the M 59 MG, which was normally carried inside the vehicle and was not provided with an armored shield.

The basic data, like speed, range and cross-country performance were not changed appreciably from the Ausf.D. The vehicles were manufactured by both SKODA and TATRA well into the fifties, when the OT-810 was replaced by the OT-64. Some of the remaining OT-810s were modified to carry the M 59A 8.2cm recoilless gun as an anti-tank weapon. The hull was again modified. The gun was concealed inside the closed vehicle and could be fired only after opening the top hatches and raising it into the firing position. The gun could be dismounted and fired from a tripod as well. It fired a HEAT or HE round.

The OT-810s were never very popular in the Czechoslovak Army, where they were called ***Hitler's Revenge*** by the soldiers.

A predecessor of the OT-810 made by Tatra. This is very similar to the Ausf.D, with an open top, vision slits in the side and even the NOTEK light. It is powered by TATRA engine resulting in a longer engine compartment.



A crew descends from an OT-810. The commander's MG ring and the widened hull are clearly visible. The Czechoslovak Army vehicles were normally camouflaged in Olive Drab with no signs or numbers. For special occasions elaborate camouflage patterns were created using color pastes of various colors (red-brown, dark green, black, yellow).

An OT-810 during Winter exercises, camouflaged with white-wash over the Olive Drab base paint. The commander is receiving directions from a dispatch rider on a Jawa motorcycle.

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An Ausf.B with a heavy dust coverage crossing a stream. Russian campaign, 1941.

SdKfz 251/6 Ausf.C with a frame aerial. This was a high commander's vehicle in Russia, 1944.